

Property Development Plan

Western Regional Center
Sand Point, Seattle,
Washington



U.S. DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
Assistant Administrator for Administration
Administrative Operations Division
Facilities Engineering Staff

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U. S. DEPARTMENT OF COMMERCE NOAA
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PROPERTY DEVELOPMENT PLAN
Western Regional Center
Sand Point, Seattle,
Washington



U.S. DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
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Facilities Engineering Staff

October 1976

1. DATE October 1976	2. FISCAL YEAR 78	CONSTRUCTION PROJECT DATA (Continued)	3. DEPARTMENT COMMERCE	4. INSTALLATION SAND POINT, SEATTLE, WASHINGTON
5. PROJECT NUMBER A5 B000/FJ 1101		6. PROJECT TITLE WESTERN REGIONAL CENTER		

TABLE OF CONTENTS	
Section	Page
I Executive Summary.....	11
II Project Summary	111
III Facility Study	1
1. Project	1
2. Current and Planned Workload	1
3. Description of Project	5
4. Cost Estimates	29
5. Justification for the Project	34
6. Justification for the Scope of the Project ..	45
7. Common Support Facilities	45
8. Effect on Other Resources	46
9. Siting of the Project	47
10. Graphic Presentations and Site Photographs	47
11. Economic Analysis	48
12. Environmental Impact	54
13. Appendices	58
A. Budget/Personnel/Space Requirements	58
B. Economic Analysis	72
C. Training Location Analysis	80
D. Alternative Location Analysis.....	86
E. Seattle Organization and Activities	98
F. Facility Requirements	104

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5. PROJECT NUMBER A5 B000/FJ 1101		6. PROJECT TITLE WESTERN REGIONAL CENTER		

EXECUTIVE SUMMARY

The National Oceanic and Atmospheric Administration proposes to construct a Western Regional Center on NOAA-owned property adjacent to the Sand Point Naval Support Activity, Seattle, Washington. The Center will replace the present Pacific Marine Center, which must be vacated by 1983; incorporate the National Weather Service Technical Training Center, now in facilities slated for demolition in the 1980's; and provide consolidated facilities for nine (9) rapidly growing NOAA components now in inadequate and scattered leased facilities in seven (7) locations in the Seattle area. Planned facilities include buildings for operation, research, electronics, education, piers, warehouses and shops, for a total of 513,119 gross square feet of enclosed space and a cost of \$62.239 M in 1976 dollars. Assuming construction over a five-year period, and starting with an appropriation of \$15.5M in FY 1977, the total budget cost is \$83.8M. A comparison of lease cost vs. the cost of construction indicates a break-even point at 17 years, after which NOAA will experience increasing cost avoidances throughout the remaining life of the facility.

While the project may be justified on economic grounds, NOAA feels that its principal justification lies in the consolidation and functional integration of heretofore separated field units. NOAA was created in 1970 to consolidate in one agency similar scientific functions on half a dozen Federal agencies in order to achieve a critical mass of resources and operating authorities. This consolidation was intended to assure more effective accomplishment of national scientific service and research objectives concerning the oceans and the atmosphere. Consolidation such as that planned at Sand Point is thus a crucial element in the achievement of one of the purposes of NOAA's creation. Considering the clear need for space and facilities in Seattle and the opportunity to provide them and achieve collocation simultaneously, NOAA recognizes multiple benefits from the project and urges that construction proceed in FY 1978 as proposed.

1. DATE OCTOBER 1976		2. FISCAL YEAR 78		3. DEPARTMENT COMMERCE		4. INSTALLATION SAND POINT, SEATTLE	
5. PROPOSED AUTHORIZATION \$83,842,000		6. PRIOR AUTHORIZATION \$1,970,000		7. CATEGORY CODE NUMBER -		8. PROGRAM ELEMENT NUMBER -	
9. STATE/COUNTRY WASHINGTON		10. PROPOSED APPROPRIATION \$83,842,000		11. BUDGET ACCOUNT NUMBER -		12. PROJECT NUMBER A5B000/FJ1101	
13. PROJECT TITLE WESTERN REGIONAL CENTER						NM	CM

SECTION A - DESCRIPTION OF PROJECT				SECTION B - COST ESTIMATES			
14. TYPE OF CONSTRUCTION		15. PHYSICAL CHARACTERISTICS OF PRIMARY FACILITY		20. PRIMARY FACILITY		U/M	QUANTITY
a. PERMANENT <input checked="" type="checkbox"/>		b. NO. OF BLDGS 11		Western Regional Center, Sand Pt.			
b. SEMI-PERMANENT <input type="checkbox"/>		c. NO. OF STORIES 2		a. Construct 11 buildings		s.f.	(548,233)
c. TEMPORARY <input type="checkbox"/>		d. LENGTH Varies		b. Construct piers, incl. dredging			
		e. WIDTH Varies		c. and apron		1.s.	(9,431)
		f. AREA 513,119 net		d.			
		g. COOLING 356,114 sq.ft. CAP. 1100 tons COST (\$1,500,000)		21. SUPPORTING FACILITIES			\$ 32,398
16. TYPE OF WORK		19. DESCRIPTION OF WORK TO BE DONE		a. Support facilities attributable			
a. NEW FACILITY <input checked="" type="checkbox"/>		Primary Facilities: Construct 11 new buildings with office, laboratory, shop, storage, classrooms & other special spaces, & associated outdoor workspaces and facilities. Construct 4 main piers for large ships, 3 small piers for small boats, with associated apron. Supporting Facilities: Includes work attributable directly to individual buildings, & work required for site development, including general site work, main utility systems, access route thru Naval Support Activity. Removal of the abandoned facilities include demolition of 3 hangars, demolition of minor buildings & removal of airfield pavement.		b. to buildings & piers		1.s.	(5,081)
b. ADDITION <input type="checkbox"/>				c. General site work		1.s.	(7,832)
c. ALTERATION <input type="checkbox"/>				d. Main Utility Systems		1.s.	(3,315)
d. CONVERSION <input type="checkbox"/>				e. Shoreline Reserve		1.s.	(887)
e. OTHER (Specify)				f. Lagoon		1.s.	(296)
17. TYPE OF DESIGN				g. Main Gate Access		1.s.	(531)
a. STANDARD DESIGN <input type="checkbox"/>				h. North Gate Access		1.s.	(433)
b. SPECIAL DESIGN <input checked="" type="checkbox"/>				i. Demolition of Hangars 1,32,33		1.s.	(817)
c. DRAWING NO. Facility Study Oct 1976				j. Design, Management & Relocation		1.s.	(13,206)
				22. TOTAL PROJECT COST			\$ 83,842

SECTION C - BASIS OF REQUIREMENT															
23. QUANTITATIVE DATA (U/M Sq. Ft.)		25. REQUIREMENT FOR PROJECT													
a. TOTAL REQUIREMENT	513,119	Project: Provide for the collocation and consolidation of nine (9) NOAA components presently dispersed at seven (7) sites in the Seattle area. Establish a NOAA-wide training facility, incorporating the National Weather Service Technical Training Center, now located at Kansas City, Mo. Mission: The proposed facility will provide for present and future integration and coordination of atmospheric and oceanic program activities. Requirement: This project is urgently needed to provide: <ul style="list-style-type: none"> • Replacement of the NOS Pacific Marine Center, which is seriously cramped and must vacate current leased facilities by 1983; • Facilities for new and growing NOAA activities; • A NOAA-wide training facility incorporating Kansas City Technical Training Center scheduled for demolition in the 1980's. • Obtain space in sufficient quantity and quality at one location. 													
b. EXISTING SUBSTANDARD	(392,899)														
c. EXISTING ADEQUATE	-0-														
d. FUNDED, NOT IN INVENTORY	120,220														
e. ADEQUATE ASSETS (c + d)	-0-														
<table border="1" style="width:100%; border-collapse: collapse;"> <tr> <th></th> <th>AUTHORIZED</th> <th>FUNDED</th> </tr> <tr> <td>f. UNFUNDED PRIOR AUTHORIZATION</td> <td></td> <td></td> </tr> <tr> <td>g. INCLUDED IN FY _____ PROGRAM</td> <td></td> <td></td> </tr> <tr> <td>h. DEFICIENCY (a - e - f - g)</td> <td></td> <td></td> </tr> </table>			AUTHORIZED	FUNDED	f. UNFUNDED PRIOR AUTHORIZATION			g. INCLUDED IN FY _____ PROGRAM			h. DEFICIENCY (a - e - f - g)				
	AUTHORIZED	FUNDED													
f. UNFUNDED PRIOR AUTHORIZATION															
g. INCLUDED IN FY _____ PROGRAM															
h. DEFICIENCY (a - e - f - g)															
24. RELATED PROJECTS															

1. DATE October 1976	2. FISCAL YEAR 78	CONSTRUCTION PROJECT DATA (Continued)	3. DEPARTMENT COMMERCE	4. INSTALLATION SAND POINT, SEATTLE, WASHINGTON
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Block 25 (Continued)

Current Situation: The existing site of 116 acres at the Naval Support Activity (NSA), Sand Point, Seattle, Washington has the capacity to meet the facility requirements. Hangars 31 and 32 and the control tower are presently occupied by NOAA organizations. The General Services Administration, as the design and construction agency, has under contract an architect-engineer and construction manager to develop master plan concepts, studies, site, access and operations building drawings. Final EIS was published January 1976 and, to date, has not faced legal challenge. The construction of this facility presents the best economical alternative to increasing complex and dispersed operations.

Impact If Not Provided:

- . Short Term: Expansion at presently leased facilities is not possible, further use of leased facilities for future requirements will require additional sites and increase dispersal in the Seattle area. Planned and needed training programs will not be implemented due to unavailability of facilities.
- . Long Term: NOAA will be left without any location for ship moorage and associated activities.

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FACILITY STUDY

1. PROJECT PURPOSE

The Sand Point Development Project is planned to meet needs for space and facilities which are, in the aggregate, the most serious NOAA faces anywhere in the Nation. The Western Regional Center will provide for collocation and consolidation of nine NOAA components now presently dispersed at leased sites in the Seattle area. Through this project NOAA will be able to:

- . Provide replacement for the Pacific Marine Center, which is seriously cramped and must vacate current leased facilities by 1983;
- . . Provide facilities for new and rapidly growing NOAA activities in such areas as: implementation of the Fishery Conservation and Management Act of 1976, Deep Ocean Mining Environmental Assessments, Puget Sound Marine Ecosystem Analysis, and the Outer Continental Shelf Energy Program; obtain adequate facilities for the Pacific Marine Environmental Laboratory currently housed in buildings designed as apartments, an airplane hanger and a control tower;
- . Establish a NOAA-wide education facility incorporating the Kansas City Technical Training Center, now operating in property scheduled for demolition in the 1980's; and
- . Accomplish consolidation of the majority of NOAA components in the Seattle area to facilitate that integration of oceanic and atmospheric programs envisioned in the formation of NOAA in 1970.

2. CURRENT AND PLANNED WORKLOAD

The organizations to be collocated on this project are shown on the following Organizational Chart. Present organization locations are shown on the Seattle area map. Summary of the current and planned organizational work loads are shown for personnel, budget and space. The 1981 requirements reflect budget estimates and anticipated program personnel. Personnel numbers shown account for anticipated work stations including full-time permanent employees, other than full-time permanent employees and visiting scientists. A more detailed summary of present and future personnel, budget, and space requirements is provided in Appendix A.

The facility will have an 100 percent utilization for planned use. Piers will be 100 percent utilized during time of berthing for four (4) months per year. Educational facility will be scheduled for an average population of 400 students and 59 staff for a 100 percent utilization.

Estimated duration of facility use is indefinite based on present missions which are expected to continue. Follow-on requirements are expected but are undertermined at this time.

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WESTERN REGIONAL CENTER

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graph TD
    WRC[Western Regional Center] --- AS[Administration and Staff Services]
    WRC --- NMFS[National Marine Fisheries Service]
    WRC --- NOS[National Ocean Survey]
    WRC --- NWS[National Weather Service]
    WRC --- ERL[Environmental Research Laboratories]
    WRC --- WRC_C[Western Regional Council]

    AS --- NASO[Northwest Administrative Service Office  
78 (NASO) 114]
    AS --- WRC_C

    NMFS --- SP[Scientific Publications Staff  
11 (SCI. PUB.) 15]
    NMFS --- NW[Northwest Region  
67 (NWRO) 98]
    NMFS --- RRU[Resource Research and Utilization  
Dotted line]
    NMFS --- NFWC[Northwest Fisheries Center  
Dotted line]
    NMFS --- RACE[Resource Assessment & Conservation Engineering  
45 (RACE) 98]

    NOS --- PMCP[Pacific Marine Center (PMC)  
614 (SHIP) 699 (SHIP)  
116 (SHORE) 126 (SHORE)]
    NOS --- NRC[Northwest Regional Calibration Center  
6 (NRCC) 11]
    NOS --- MMD[Marine Mammal Div.  
34 (MMD) 35]

    NWS --- NWS_FO[NWS Forecast Office  
38 (NWS-FO) 50]
    NWS --- ES[Employee Services  
0 12]
    NWS --- EDSL[Environmental Data Service Library  
0 (EDS) 12]

    ERL --- PMEL[Pacific Marine Environmental Laboratory  
97 (PMEL) 165]
    ERL --- MESA[Marine Ecosystem Analysis Program  
Puget Sound  
10 (MESA) 15]
    ERL --- TTC[NOAA Technical Training Center  
36 (TTC) 59]

    CZES[Coastal Zone & Estuarine Studies Div.  
11 (CZ&ES) 17] --- RACE
    PMCP --- MMD
    MMD --- PURC[Pacific Utilization Research Center  
32 (PURC) 34]
  
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Administration and Staff Services

- Northwest Administrative Service Office
78 (NASO) 114
- Western Regional Council
5 (WRC) 14

National Marine Fisheries Service

- Scientific Publications Staff
11 (SCI. PUB.) 15
- Northwest Region
67 (NWRO) 98
- Resource Research and Utilization
(Dotted line)
- Northwest Fisheries Center
(Dotted line)
- Resource Assessment & Conservation Engineering
45 (RACE) 98

National Ocean Survey

- Pacific Marine Center (PMC)
614 (SHIP) 699 (SHIP)
116 (SHORE) 126 (SHORE)
- Northwest Regional Calibration Center
6 (NRCC) 11
- Marine Mammal Div.
34 (MMD) 35

National Weather Service

- NWS Forecast Office
38 (NWS-FO) 50
- Employee Services
0 12
- Environmental Data Service Library
0 (EDS) 12

Environmental Research Laboratories

- Pacific Marine Environmental Laboratory
97 (PMEL) 165
- Marine Ecosystem Analysis Program
Puget Sound
10 (MESA) 15
- NOAA Technical Training Center
36 (TTC) 59

Coastal Zone & Estuarine Studies Div.
11 (CZ&ES) 17

Pacific Utilization Research Center
32 (PURC) 34

Note: 1. Organizations to be located at Sand Point shown with solid lines.

2. Dotted lines represent organizations to remain in present locations with expanded activities.

3. Numbers indicate FY76 and FY81 positions.

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2. (continued)

SEATTLE AREA MAP
1976 NOAA ORGANIZATIONAL LOCATIONS

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2. (Continued)

TOTAL REQUIREMENTS

PLANNED PERSONNEL, BUDGET & SPACE SUMMARY

	PERSONNEL ⁽¹⁾ (Nos. of Positions)				BUDGET ⁽¹⁾⁽²⁾ (\$1000)				SPACE ⁽³⁾ (sq. ft.)			
	FY76	FY81	Growth	% Change	FY76	FY81	Growth	% Change	FY76	FY81	Growth(sf)	% Change
EDS LIBRARY	0	3	3	--	0	104.3	104.3	--	0	8960	8960	--
EMPLOYEES SERVICES	0	12	12	--	0	--	--	--	0	11620	11620	--
NMFS-NWRO	67	98	31	+46	5791.0	8013.0	2222.0	+38	14921	16372	1451	+30
NWFC	90	150	60	+67	2901.8	7836.2	4934.4	170	71009	93591	22582	+32
NWS-FO	38	50	12	+31	945.3	1476.2	530.9	56	7605	10580	2975	+39
PMC W/ SHIP	614	699	85	+14	--	--	--	--	0	--	--	--
PMC W/O SHIP	116	126	10	+9	17461.3	22947.4	5485.1	+31	56140	79966	23826	+42
NRCC	6	11	5	+83	150.0	191.5	41.5	+28	5400	6651	1251	+23
PMEL	102	165	63	+62	4000.0	6600.0	2600.0	-65	36100	57693	21593	+60
MESA	5	15	10	+200	1650.0	2070.0	420.0	+25	550	2987	+2437	+443
PURC ⁽⁴⁾	32	34	2	+6	793.9	1073.2	279.3	+35	24320	29102	4782	+20
SCI. PUB. ⁽⁵⁾	11	15	4	+36	470.3	727.1	256.8	+55	3745	2900	-845	-23
TRAINING	36	59	23	+64	812.0	1279.0	467.0	+58	35000	93850	58850	+168
NASO	78	114	36	+46	1284.5	2367.0	1082.5	+84	11604	54888	43284	+373
GEN. COUNSEL	5	14	9	+180	112.0	249.0	137.0	+122	741	2979	2238	+302
TOTAL W/SHIPS	1200	1565	365	+30	36373.1	54933.9	18561.8	+51	267205	472139	204930	+76
W/O SHIPS	586	866	280	+48								

(1) FY81 Projections determined by latest known requirements with FY76 as base.

(2) Includes inflation calculated at 5% per annum.

(3) Based on Space and Functional Requirements Data (SFRD) dated Aug. 1976, with changes calculated using FY76 as base. Space Shown is net useable.

(4) Effective 10/1/76, PURC is organizationally located within the NWFC.

(5) Effective 10/1/76 Sci. Pub. is organizationally located within the NWRO.

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3. DESCRIPTION OF THE PROJECT

a. Type of Construction

This project consists of a construction program of 11 new buildings, 4 main piers, three small boat piers, and site development including dredging, utilities, roads, parking space, and access routes. The facility will be considered permanent, with a useful life of at least 30 years.

b. Replacement This plan includes the demolition of existing structures. This project will utilize hangars 1, and 32, and 33 if determined to be economically feasible. Existing storm drainage will be used to the extent practicable and supplemented as necessary. Other utilities are to be abandoned and other structures including existing pavement are to be removed.

c. Type and Design

The facility will be a special design as standard type drawings are not available. Appendix F presents a summary of facility requirements study for planning and budgeting.

d. Description of Work to be Done

(1) Primary Facility. The primary facility will consist of 11 newly constructed buildings plus piers.

(a) Operations Building

The Operations Building is a two-story building consisting mainly of office space required for administrative and support functions for Seattle area components, ship operations of the National Ocean Survey (NOS) and for administrative and program functions of Sand Point components. The total space provided in this building is 84,780 sq. ft. for 367 personnel replacing existing leased facilities, which are both dispersed and lacking necessary expansion space. Components located here are Northwest Administrative Service Office (NASO), Northwest Regional Office of National Marine Fisheries Service (NMFS), Office of the General Counsel, Office of Scientific Publications of NMFS, and the Pacific Marine Center of NOS. A small amount of laboratory space (3950 sq. ft.) is provided for Pacific Marine Center (PMC) for functions needing collocation with other PMC offices in this building and not related to programs in the laboratory buildings. The Weather Service Forecast Office of the National Weather Service is also located in the Operations Building.

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3. d. 1. (a) (Continued)

Special features of the Operations Building include 1630 sq. ft. of sound proof construction; 250 sq. ft. of Radio Frequency Interference (RFI) shielded space; the employee health and dental unit of 1400 sq. ft.; and a consolidated library of 1000 sq. ft. The monitor/control room for the Central Automatic Control system, automatically monitoring and controlling security, fire alarms, utilities, building heating, ventilating and air conditioning (HVAC) systems, and other systems is located in this building. Equipment from existing government inventories to be located in this building includes computer terminals, reproduction and xerographic equipment, and National Weather Service and PMC communications equipment. Special considerations for handicapped visitors and occupants will be provided. Covered walkways connect this building with others in the immediate vicinity.

(b) Research Building

The Research Building is a 2-story structure totalling 115,248 sq. ft. of space distributed as follows: Offices, 44,540 net s.f.; Labs, 35,530 s.f.; Open Areas, 15,380 net s.f.; Allowance for Toilets, Corridors, Custodial Space, Access and Circulation; 10,477 s.f. The building will house functional facilities for major line components engaged in biological, chemical, environmental, oceanographic and atmospheric research, and will include areas dedicated to Pacific Marine Environmental Laboratory and the following Northwest Fisheries Center Units: Pacific Utilization Research Center, Resource Assessment and Conservation Engineering Division and Marine Mammals Division. Each component will operate in its own area, and within each component offices and labs will be grouped separately. These areas will be designed for maximum space flexibility, in order to be economically convertible for changing programs. Office areas and open areas, wherever possible, will be contiguous for additional flexibility.

Existing NOAA-owned laboratory space at 2725 Montlake Boulevard will continue in use by the Northwest Fisheries Center, and will be devoted to units not requiring collocation with functions at Sand Point. Other current lab facilities in leased space and those at the Naval Support Activity, will be released for other use.

Laboratory space will have RFI-free fluorescent lighting; controlled temperature and humidity; exhaust hood system separate from general building ventilation; washable and dust free finishes for floor, walls, and ceilings; double width doors for fork lift access; and utilities such as oil-free compressed air, gas, hot and cold deionized/demineralized water, hot and cold water, and vacuum. Special requirements for various labs include sound proofing, special water supply systems, high ceilings (up to 18ft.), overhead hoists and cranes, effluent holding/treatment facilities, special refrigeration, positive pressure for outward air flow, and special utilities such as fuel oil, special power, steam, dechlorinated water, and controlled-temperature chilled and hot water. A computer area is also provided; with raised floor system, temperature and humidity control, sound proofing, and fire protection system. Special considerations for handicapped visitors and occupants will be provided. Covered walkways connect this building with others in the immediate vicinity.

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<p>3. d. (1) <u>(Continued)</u></p> <p>(c) <u>Electronics Building</u></p> <p>The Electronics Building will be a one-story structure for 69 personnel totalling 32,874 sq. ft. Approximately one half of the space will be offices, computer area, and minor storage. The remaining half will be laboratory space. All laboratory space will have temperature-controlled with positive pressure for cleanliness; washable dust-free finishes on walls, floors and ceilings and RFI-free fluorescent lighting. Special requirements for various labs include sound proofing and services such as natural gas, compressed air, refrigerant, special power, deionized and distilled water, and high ceilings. Requirements for the computer area include a raised floor temperature and humidity control, sound proofing and fire protection systems. Office areas, wherever possible, will be contiguous for future flexibility.</p> <p>Components whose space needs will be met in the Electronics Building include Pacific Marine Environmental Laboratory's Base Operations Support Services, Pacific Marine Center's Processing Division, National Weather Service Electronics Shop, Northwest Regional Calibration Center, and Northwest Fisheries Center Resource Assessment and Conservation Engineering Division. Each component will operate in its own area, and within each component, offices and labs will be grouped separately. Covered walkways will connect this building with the other buildings in the immediate vicinity.</p> <p>(d) <u>Education Building</u></p> <p>The Education Building will be a two story structure totalling 99,550 net sq. ft. Included are 12,000 sq. ft. for an auditorium, 12,000 sq. ft. for office and administration, 61,300 sq. ft. for classrooms and laboratories; with the remainder divided among shops, and unheated storage. Special considerations for handicapped staff and students will be provided.</p> <p>The primary training will be focused upon professional and technical needs, though training will be provided for administrative, managerial, and personnel needs. Professional and technical training will include the disciplines of cartography, hydrology, meteorology, marine biology, biochemistry, electronics, geophysics, and the various marine trades. This building provides for and expands considerably, the training currently being conducted at the Technical Training Center (TTC) located in Kansas City, Mo., in a facility scheduled by GSA for demolition in the 1980's.</p>				

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3. d. (1) (Continued)

(e) Main and Small Boat Piers

The Main Piers provide berthing space for the 12 vessels expected to be based at the Pacific Marine Center by 1981. Three of these vessels are about 300 feet long, and the remainder vary down to slightly less than 100 feet. These ships are engaged in hydrographic and oceanographic surveys and other surveys and research projects. The piers are 40 ft. wide; 2 are 470 ft. long and the others are 400 and 330 feet each. Construction will be concrete, with deck height of 8 ft. A 150 ft. wide concrete apron along the shore behind the piers provides additional working and staging area. The apron requires a small landfill to raise it up to pier height.

The Small Boat Piers will be provided for use by hydrographic launches and other small craft. Two piers, 10 ft. wide and 130 ft. long are required, plus a small 40 ft. long stub pier near one of the main piers for use by a mobile lift vehicle in removing small boats from the water. Electric power and a connection to the ballast and bilge water handling system of the Main Piers will be provided. Pier construction will be concrete.

Utilities provided to the main piers for ship connections include water (for domestic and fire fighting systems), sanitary sewers, ballast and bilge handling, fuel handling, steam supply and condensate return, electric power, and telephone lines. Descriptions of these services are included with support facilities descriptions. A trench for easy access will be provided at the pier centerline for all utilities except electrical and communications. Pier area lighting intensity will be equivalent to street level illumination with emergency lighting also provided.

The main pier area will be dredged to provide an area with a depth of 30 ft., to minimize lake bottom disturbances from vessel operations. The maximum vessel draft is 18.5 ft. Techniques to minimize the adverse environmental effects of the dredging, such as a plastic water column curtain, non-polluting flocculants, and scheduling dredging between October and December (period of lowest biological activity) will be utilized. The resulting dredge spoil, 275,000 c.y. will be dehydrated behind earth containment berms on site, and later used as required for regrading. Rip rap will be placed on the dredged slope at the shoreline to protect the slope. Material for the rip rap will be obtained by selecting properly sized pieces from the removal of concrete runway and apron.

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5. PROJECT NUMBER A5 B000/FJ 1101		6. PROJECT TITLE WESTERN REGIONAL CENTER		

3. d. (1) Continued

(f) Warehouse

The Warehouse will be a one-story building totalling 99,210 feet. for bulk storage and for the receipt, storage and issue of incoming materials. It will provide the consolidated warehousing requirements of the Sand Point facility, replacing the existing NASO supply depot and consolidating dispersed supply activities.. It will have 33,400 sq. ft. of heated and ventilated space for storage of items requiring heated storage. The remaining 61,650 sq. ft. of storage will be ventilated space only. Secure storage will require 900 sq. ft. Cabinets and shelving will be required in 8,000 sq. ft. An office area of 4,160 sq. ft., air-conditioned and heated, will be provided for inventory control, supply, issue, shipping and receiving. The entire building will have sprinklers for fire protection.

(g) Shops

The shops serve the consolidated requirements of the various components for fabrication, assembly and repair of equipment and parts, for small craft and larger ships. Shops include machine, carpentry, painting, sandblasting welding and others. Shop space is required by the Pacific Marine Center, the Pacific Marine Environmental Laboratory and various divisions of the Northwest Fisheries Center. A one-story building totalling 30,609 sq. ft. will be provided with heating and ventilation, exterior roll-up doors. Compressed air, electric power for tools and equipment, and sprinklers for fire protection. An air-conditioned area of 4,160 sq. ft. for support and engineering offices is included. The majority of the initial outfitting of the shops will be done using material and equipment provided from the existing inventory of tools and equipment of the components to be consolidated in the new building.

(h) Enclosed Work Area

The Enclosed Work Area provides 31,700 sq. ft. of weather and wind protected work area, with a 10-foot clear height. Heat and ventilation is provided for 200 sq. ft. of office space and 6,500 sq. ft. for buoy maintenance and fine net repair. The remaining area for large net repair is ventilated only. Roll-up doors will be provided. The space will be used by the ocean-atmosphere response studies of the Pacific Marine Environmental Laboratory (OARS) and Resource Assessment and Conservation Engineering Division of the Northwest Fisheries Center. Sprinklers will be provided for fire protection.

1. DATE October 1976	2. FISCAL YEAR 78	CONSTRUCTION PROJECT DATA (Continued)	3. DEPARTMENT COMMERCE	4. INSTALLATION SAND POINT, SEATTLE, WASHINGTON
5. PROJECT NUMBER A5 B000/FJ 1101		6. PROJECT TITLE WESTERN REGIONAL CENTER		
<p>3. d. (1) <u>Continued</u></p> <p>(i) <u>Covered Storage and Boat Storage</u></p> <p>Covered Storage and Boat Storage provides 33,400 sq. ft. of storage space with floor and roof only. The required clear height is 16 feet. Components using Covered Storage and Boat Storage include Northwest Administrative Service Office, Pacific Marine Center, Northwest Regional Office of NMFS, Pacific Marine Environmental Laboratory and Resource Assessment and Conservation Engineering Division of Northwest Fisheries Center. Sprinklers will be provided for fire protection.</p> <p>(j) <u>Employee Services Building</u></p> <p>The Employee Services Building will provide on-site food services for employees and visitors as well as a facility for the Federal Employees Credit Union. Food service planning is based on a 1600 peak facility population with all ships in port and a full compliment of 400 students at the Education Center, and is planned to have the capacity to serve 600 customers in 1 1/2 hours. Credit Union and food service facilities will be operated as concessions with space leased by the government to the concessionaires. The building will be one-story with 3,850 sq. ft. for dining room, 5,770 sq. ft. for food preparation, 1,000 sq. ft. for an employee lounge, and 1000 sq. ft. for the banking/credit union space, for a total of 12,782 sq. ft. The Employee Services Building is connected to other buildings in the immediate vicinity by covered walkways.</p> <p>(k) <u>Security/Information Station</u></p> <p>This building provides the central point for distribution of published data, reports, brochures, and pamphlets for use by the general public. It provides security and gate control at the Main Gate, and an information center for visitors to the facility. Both the National Weather Service and the Pacific Marine Center now schedule visits by organized groups, and guidance to the reception points for these and other programs will be provided to visitors stopping here. Also provided is space for sale and distribution of NOAA publications and charts, marine marketing and fisheries charts, weather and environmental data developed on a routine and special basis by NOAA. The total space provided is 2,400 sq. ft.</p>				

1. DATE October 1976	2. FISCAL YEAR 78	CONSTRUCTION PROJECT DATA (Continued)	3. DEPARTMENT COMMERCE	4. INSTALLATION SAND POINT, SEATTLE, WASHINGTON
5. PROJECT NUMBER A5 B000/FJ 1101		6. PROJECT TITLE WESTERN REGIONAL CENTER		

3. d. (2) (Continued)

(c) Steam Distribution System

The Steam Distribution System consists of approximately 6,550 feet of high pressure steam supply and condensate return main. Piping will be insulated and buried in a concrete envelope.

(d) Chilled Water Distribution System

The chilled water distribution system consists of approximately 3,200 feet of chilled water supply and chilled water return distribution. Piping shall be preinsulated, prefabricated, jacketed and installed below ground.

(e) Sanitary Sewer System

The total peak sanitary sewage flow will be approximately 530 GPM for the entire NOAA area. The sewer will be discharged into the Metro line sewer on Sand Point Way which has enough extra capacity to collect the peak flow from NOAA. Since the NOAA project site is lower than the Metro main sewer by approximately 35 feet, two pump stations will be required. A holding tank is planned for the main sewage pump station for emergency use. The holding tank has a capacity of 24-hour retention for the average daily flow, 68,000 GPD excluding flow from ships. All domestic sewage flow from the buildings will be collected to the wet well of the main pump station by gravity sewer systems. The bilge and ballast waste water line and domestic sewer from the ships to be separated. As per normal practice, the sewer system will provide for a 50% future increase, including the main pumping station and holding tank.

1. DATE October 1976	2. FISCAL YEAR 78	CONSTRUCTION PROJECT DATA (Continued)	3. DEPARTMENT COMMERCE	4. INSTALLATION SAND POINT, SEATTLE, WASHINGTON
5. PROJECT NUMBER A5 B000/FJ 1101		6. PROJECT TITLE WESTERN REGIONAL CENTER		

3. d. (2) Continued

(f) Water Distribution System

One 12" new main is connected to the new NOAA water main system through the North Gate. One combined fire and domestic system is planned, which consists of several loops to prevent dead-end stagnation, to reduce friction loss and to supply enough fire flow in the event of pipe failure. Average daily domestic water demand is approximately 200 GPM and peak domestic water is approximately 800 GPM. Fire demand is estimated at 2,000 GPM. The distribution pipe line is designed based on the sum of the fire flow and fifty percent (50%) of the average domestic demand. Each pier has a water main for ship service connections, such as domestic water bilge, ballast, and fire protection water supplies. The city water main has enough capacity to supply the peak flow of 2,100 GPM and maintain the required pressure. The distribution system is adequate for a 50% increase in domestic water demand in accordance with usual design practice.

(g) Storm Sewer System

All storm sewers will meet environmental requirements. The storm sewer system of NOAA facilities are separated into three systems.

- Combination of existing servicable storm sewer system and a new storm sewer system to replace unservicable existing sewers which previously served the Naval Support Activity area.
- Storm sewer systems for paved areas, draining into skimming and settling tanks for oil and grease removal and settling of solids.
- Surface drainage and culverts for grassed and landscaped areas draining directly into the lake.

1. DATE October 1976	2. FISCAL YEAR 78	CONSTRUCTION PROJECT DATA (Continued)	3. DEPARTMENT COMMERCE	4. INSTALLATION SAND POINT, SEATTLE, WASHINGTON
5. PROJECT NUMBER A5 B000/FJ 1101		6. PROJECT TITLE WESTERN REGIONAL CENTER		

3. d. (2) Continued

(h) Communication Systems

Exterior communication duct bank shall run parallel to electric lines. Telephone cable shall be provided by the telephone company. Central automatic control is proposed for the entire facility. Central control room shall be located in the Operations Building. Central control room shall control:

- Security, perimeter and internal, including closed circuit T.V.
- Fire alarm system. Base maintenance, communication and emergency announcements.
- Emergency power and lighting controls.
- HVAC and utility monitoring.
- Facility maintenance scheduling, energy and labor cost accounting and analysis.

1. DATE October 1976	2. FISCAL YEAR 78	3. CONSTRUCTION PROJECT DATA (Continued)	5. DEPARTMENT COMMERCE	4. INSTALLATION SAND POINT, SEATTLE, WASHINGTON
6. PROJECT NUMBER A5 B000/FJ 1101		6. PROJECT TITLE WESTERN REGIONAL CENTER		

3.e. UNUSUAL COST FEATURES

(1) Primary Facility

Primary facility cost features include those normal to an operational, research, and ship support complex; such as, temperature and humidity controls, exhaust systems, fire protection and detection systems, communications and alarm systems. Incidental to pier construction are dredging and spoil removal, and complete utility service for ships, including oil-water separator for ballast removal and bilge cleaning. Fallout shelter needs have been considered and no special structures are deemed necessary. Value management, including life-cycle costs, will be part of the design process on each structure, evaluating design criteria to determine lowest overall cost consistent with desired performance. Hangars 1, 32, and 33 are being evaluated for retention and renovation or demolition and replacement based on costs, function and aesthetics. Present project estimate includes budgeting for demolition of these structures and replacement with more economical buildings based on life-cycle costs.

(2) Support Facilities

The site preparation and the construction of new buildings and ship support facilities include a number of unusual cost features due to the need to remove portions of the old Naval Air Station. General site preparation includes removal of portions of the old concrete and asphalt runways, taxi-ways and hardstands; and installation of roads, parking, lighting, landscaping and a complete utility system including a sewage pumping station, utility plant, and fire systems required for site development.

(3) Energy Conservation

Energy consideration in developing the master plan in conjunction with the General Services Administration are:

- . Analysis of alternatives in determining the primary fuel for the facility. Fuels considered will be in accordance with Chapter 4 of Criteria for Federal Office Buildings (GSA).
- . Life cycle energy costs and a total energy system for the facility will also be considered in development of economic fuel analysis.
- . The block load for each building shall be based on the Energy Conservation Guidelines for the New Office Buildings (GSA).

1. DATE October 1976	2. FISCAL YEAR 78	CONSTRUCTION PROJECT DATA (Continued)	3. DEPARTMENT COMMERCE	4. INSTALLATION SAND POINT, SEATTLE, WASHINGTON
5. PROJECT NUMBER A5 B000/FJ 1101		6. PROJECT TITLE WESTERN REGIONAL CENTER		

3.e. (3) Continued

- . Each building in the primary facility shall have an evaluation of environmental system alternatives and life cycle costs over the operating period, and energy consumption of component equipment at full and partial loads.
- . Energy cost study as part of economic feasibility of hangars.

(4) Use and Retention of Existing Facilities

Use of existing storm drainage as much as possible will be incorporated in the final Master Plan. All other underground utilities will be abandoned because of deterioration or inappropriate location. The retention, improvement and incorporation of one or more of the existing Hangars 1, 32, 33 will be considered to meet functional needs, based upon the results of the feasibility study previously cited.

Of the existing Sand Point structures, Hangars 1, 32, and 33 and Building 264, and the Control Tower offer temporary solutions to some of NOAA's immediate space needs. In late 1975, NOAA began to refurbish portions of Hangar 32 for about \$499,000. Refurbishing expenditures plus 1 year's maintenance operations for the hangar are less than a year's comparable lease through GSA. Over succeeding years to 1981, an annual cost avoidance of over \$580,000 will occur. However, this is not satisfactory space, and is considered a temporary solution. See Section 10 for photographs of existing facilities.

1. DATE October 1976	2. FISCAL YEAR 78	CONSTRUCTION PROJECT DATA (Continued)	3. DEPARTMENT COMMERCE	4. INSTALLATION SAND POINT, SEATTLE, WASHINGTON
5. PROJECT NUMBER A5 B000/FJ 1101		6. PROJECT TITLE WESTERN REGIONAL CENTER		

3. e. (4) Continued

(a) Hangar 32

Hangar 32 was constructed in 1938, including the north and south office areas, utilizing structural steel. The four corner towers were constructed with structural steel floor and wall framing; and concrete floor slabs. The north and south 2-story office areas are approximately 20' x 260' and framed with structural steel supporting timber floors and roof decking. Existing ceilings are primarily suspended metal lath and plaster. Existing interior walls are plasterboard. The existing 2-story timber - framed shop facilities in the center of Hangar 32 are approximately 39' x 238' and were constructed in 1946. Subsequent additions and renovations took place from 1947 to 1950. Within the structure there is approximately 47,000 square feet of laboratory, shop, and office space. There is also approximately 60,000 square feet of main hangar space which is presently being used as a general storage.

The space in Hangar 32 is presently occupied by approximately 130 employees. The units occupying Hangar 32 consist of portions of the Pacific Marine Environmental Laboratory (PMEL) and portions of the Northwest Fisheries Center. PMEL will occupy approximately 20,000 square feet of office space, and the fisheries groups occupy approximately 27,000 square feet of office space. The greatest demand for use of this space is for laboratories and shops. The 60,000 square feet of open space is poorly lighted and not heated. This space will be utilized as storage space for equipment including netting materials, buoys, winches, etc., which are used in oceanographic, fisheries, environmental, and other research programs.

(b) Hangar 33

Hangar 33 is now being used, and will continued to be used for storage of a considerable amount of NOAA gear and equipment which cannot be stored outdoors but does not require heated or lighted space. Hangar 33 has approximately 37,000 square feet of potential laboratory, shop, and office space. This is about 10,000 square feet less than contained in Hangar 32, as the center section of this hangar does not have a second deck. The open storage area is approximately the same as that in Hangar 32 or 60,000 square feet.

Renovation of this hangar is estimated at about \$1 million. The steam lines to this hangar, which were utilized for heating, were disconnected several years ago, and therefore no heat of any kind is possible in this hangar without extensive expenditures. The electrical system within the Hangar has also deteriorated to the point where it is not safe to expect reliable power within the hangar. NOAA has interim plans to use all of the storage space in Hangar 33. Much of this space will be used temporarily to store small boats and launches of the Pacific Marine Center as well as other major equipment items used in vessel support.

1. DATE October 1976	2. FISCAL YEAR 78	3. DEPARTMENT COMMERCE		4. INSTALLATION SAND POINT, SEATTLE, WASHINGTON			
5. PROJECT NUMBER A5 B000/FJ 1101		6. PROJECT TITLE WESTERN REGIONAL CENTER					
3. e. (4) <u>Continued</u>							
(c) <u>Hangar 1</u>							
<p>Hangar 1 is the oldest of the three hangars and has been determined to be not economical for renovation. This hangar should be demolished at the earliest practical date because the entire hangar is in general disrepair, with extensive roof deterioration. Its use, however, will be considered as part of the above feasibility studies.</p>							
(d) <u>Control Tower</u>							
<p>The Control Tower is a wood frame structure constructed in 1946. At present, about one-half of the building's 19,000 square feet of space are occupied by PMEL. In April 1976, PMEL requested that the additional space for an additional 40 personnel in the tower building be rehabilitated for its use. This structure will be used for project office and contractor personnel and is scheduled for demolition at project completion.</p>							
(e) <u>Status of Existing Facilities</u>							
<u>Bldg. No.</u>	<u>Type</u>	<u>Construction Type</u>	<u>Year Const.</u>	<u>Size (sq. ft.)</u>	<u>Present Condition</u>	<u>Possible Use (Short Term)</u>	<u>Possible Use (Long Term)</u>
1	Aircraft Hangar	Structural Steel Roof, Trusses, Columns on Concrete Floor	1928	58,242	Poor	NOAA Storage	Renovation/Demolition
32	Aircraft Hangar	Structural Steel Roof, Trusses, Columns on Concrete Floor	1939	108,449	Fair	Interim Office Space & Indoor Workspace for PMEL & NWFC Units	Renovation/Demolition
33	Aircraft Hangar	Structural Steel Roof, Trusses, Columns on Concrete Floor	1939	102,170	Fair	NOAA Storage & Construction Staging	Renovation/Demolition
264	Control Tower	Wood Frame	1946	18,976	Poor	Interim Office Space & Project Office	Demolition

1. DATE October 1976	2. FISCAL YEAR 78	3. DEPARTMENT COMMERCE		4. INSTALLATION SAND POINT, SEATTLE, WASHINGTON			
5. PROJECT NUMBER A5 B000/FJ 1101		6. PROJECT TITLE WESTERN REGIONAL CENTER					

3.e. (4) (e) Continued

Bldg. No.	Type	Construction Type	Year Const.	Size (sq. ft.)	Present Condition	Possible Use (Short Term) (Long Term)	
102	Engine Test Stand	Reinforced Concrete	1941	7,247	Unsatisfactory for use	Demolition	
122	Inert Storage	Wood Frame on Concrete Floor	1942	11,080	Unsatisfactory for use	Demolition	
247	Maintenance Storage	Wood Frame on Concrete Floor	1944	3,267	Unsatisfactory for use	Demolition	
121	Storage	Wood Frame	1942	810	Unsatisfactory for use	Demolition	
21	Magazine	Reinforced Concrete Bunker	1936	Unknown	Unsatisfactory for use	Demolition	

1. DATE October 1976	2. FISCAL YEAR 78	CONSTRUCTION PROJECT DATA <i>(Continued)</i>	3. DEPARTMENT COMMERCE	4. INSTALLATION SAND POINT, SEATTLE, WASHINGTON
5. PROJECT NUMBER A5 B000/FJ 1101		6. PROJECT TITLE WESTERN REGIONAL CENTER		

3. f. Collateral Equipment

(1) The following equipment is integral to the primary facility, chargeable to the project and included in the architectural/structural/mechanical and electrical costs.

EQUIPMENT NAME OR DESCRIPTION	NO. UNITS REQUIRED	TOTAL COST ALL UNITS	EQUIPMENT NAME OR DESCRIPTION	NO. UNITS REQUIRED	TOTAL COST ALL UNITS
<u>OPERATIONS BUILDING</u>			<u>RESEARCH BUILDING (Continued)</u>		
Health & Dental Unit		8,000	Cold/Freezer Rooms	5	78,200
Sinks, Hoods & Vents	2	9,000	Hood Exhaust/Scrubber System	1	21,100
Library Shelving		7,000	Cold Storage Rooms	3	59,100
Laboratory Tables/Benches		63,000			
Elevator		38,000			
RFI Shielded Room		31,000			
Automatic Control Unit		39,000			
			Subtotal		855,410
	Subtotal	195,000			
<u>RESEARCH BUILDING</u>			<u>ELECTRONICS BUILDING</u>		
Lab. Casework, Counter Tops, Sinks		420,000	Laboratory Case Work, Benches		160,000
Vault	1	23,000	Vault	1	7,000
Pedestal Floor Area		13,000	Pedestal Floor Room		9,600
Elevators	1	76,000	Unit Substation	1	68,200
Salt Water Storage Tank	1	10,170			
Unit Sub Station	1	99,200			
Emergency Generator	1	38,750			
RFI Fixtures		6,975			
Salt Water Supply Pumps	2	8,220			
Lake Water Supply Pump	1	1,695			
			Subtotal		244,800

1. DATE October 1976	2. FISCAL YEAR 78	CONSTRUCTION PROJECT DATA (Continued)	3. DEPARTMENT COMMERCE	4. INSTALLATION SAND POINT, SEATTLE, WASHINGTON
5. PROJECT NUMBER A5 B000/FJ 1101		6. PROJECT TITLE WESTERN REGIONAL CENTER		

3.f.(1) (Continued)

<u>EQUIPMENT NAME OR DESCRIPTION</u>	<u>NO. UNITS REQUIRED</u>	<u>TOTAL COST ALL UNITS</u>	<u>EQUIPMENT NAME OR DESCRIPTION</u>	<u>NO. UNITS REQUIRED</u>	<u>TOTAL COST ALL UNITS</u>
<u>EDUCATION BUILDING</u>			<u>SHOPS</u>		
Library/Classroom, Seating and Shelving		112,000	Work Benches, Shelving, Cabinets		30,000
Laboratory Cabinets, Benches and Sinks		319,000	Divers Locker	1	20,000
Auditorium Seating		93,000	Unit Substation	1	65,100
Audio Visual Equipment		60,000	2-Ton Hoist	2	10,000
Unit Substation		<u>85,300</u>			
Subtotal		669,300	Subtotal		125,100
 <u>MAIN PIERS</u>			 <u>COVERED STORAGE & BOAT STORAGE</u>		
Sewage/Ballast/Bilge Pumps	2	60,000	Unit Substation		<u>28,700</u>
Regulator Transformer	8	49,600			
Transformer	16	62,000	Subtotal		28,700
Oil/Water Separater	1	<u>5,650</u>	 <u>EMPLOYEE SERVICES BUILDING</u>		
Subtotal		177,250	Credit Union Equipment & Vault		<u>23,000</u>
 <u>WAREHOUSE</u>			Subtotal		23,000
Explosive Storage Shelving		4,000			
MMD Shelving		<u>20,000</u>			
Subtotal		24,000			

1. DATE October 1976	2. FISCAL YEAR 78	CONSTRUCTION PROJECT DATA (Continued)	3. DEPARTMENT COMMERCE	4. INSTALLATION SAND POINT, SEATTLE, WASHINGTON
5. PROJECT NUMBER A5 B000/FJ 1101		6. PROJECT TITLE WESTERN REGIONAL CENTER		

3.f.(1) (Continued)

<u>EQUIPMENT NAME OR DESCRIPTION</u>	<u>NO. UNITS REQUIRED</u>	<u>TOTAL COST ALL UNITS</u>
<u>UTILITY PLANT</u>		
Transformer	1	54,600
Main Distribution Panel	1	54,000
370 HP Steam Boilers	3	137,800
550 Ton Centrifugal Water Chillers	2	136,560
660 Ton Cooling Towers	2	29,800
Water Circulating Pumps	6	22,350
Fuel Oil Tanks	3	26,070
Subtotal		461,180
<u>SITE WORK & UTILITIES</u>		
Emergency Sanitary Pump Station Diesel Generator	1	38,800
Sanitary Pump Station, Motors, with Control Equipment	1	45,000
Lagoon Circulation Pump	1	5,650
Subtotal		89,450
UNADJUSTED TOTAL		2,893,190
BUDGET TOTAL		4,054,000

1. DATE October 1976	2. FISCAL YEAR 78	3. CONSTRUCTION PROJECT DATA (Continued)	4. DEPARTMENT COMMERCE	5. INSTALLATION SAND POINT, SEATTLE, WASHINGTON
6. PROJECT NUMBER A5 B000/FJ 1101		7. PROJECT TITLE WESTERN REGIONAL CENTER		

3. f. (Continued)

(2) The following collateral equipment is chargeable to the construction project but not considered built-in and is the equipment costs.

EQUIPMENT NAME OR DESCRIPTION	NO. UNITS REQUIRED	TOTAL COST ALL UNITS	EQUIPMENT NAME OR DESCRIPTION	NO. UNITS REQUIRED	TOTAL COST ALL UNITS
<u>OPERATIONS BUILDING</u>			<u>ELECTRONICS BUILDING</u>		
Regulated Power Sources		15,000	Special Lab Air Conditioning	1	7,400
Dark Room Equipment		2,500	Chemical Fume Hood	1	625
Washer, Hoods & Vents		5,500	500 Gal Overflow Tank	1	825
			Cold Room	1	15,000
Subtotal		23,000	Heat Sink	1	825
<u>RESEARCH BUILDING</u>			Chain Hoist	1	825
Graphics Equipment		3,000	5 HP Pumps	3	3,000
Engineering Equipment		10,000	25 HP Refrigeration Compressor	1	7,500
Furniture & Equipment		170,800	Misc. Equipment		13,000
Carpentry-Machine		415			
Visitor Center Equipment		1,950	Subtotal		48,000
Conference Room Equipment		16,300	<u>EDUCATION BUILDING</u>		
Computer Terminals		4,500	Files, Chairs & Tables		48,000
Video Terminal		8,000			
Plotter/Tape Drive		10,000	Subtotal		48,000
Water Treatment Facility	1	30,000	<u>WAREHOUSE</u>		
20 HP Boiler	1	30,000	Supply/Storage Shelving		60,000
Overhead Crane System	1	14,000			
Subtotal		298,965	Subtotal		60,000

1. DATE October 1976	2. FISCAL YEAR 78	CONSTRUCTION PROJECT DATA (Continued)	3. DEPARTMENT COMMERCE	4. INSTALLATION SAND POINT, SEATTLE, WASHINGTON
5. PROJECT NUMBER A5 B000/FJ 1101		6. PROJECT TITLE WESTERN REGIONAL CENTER		

3. f. (2) (Continued)

EQUIPMENT NAME OR DESCRIPTION	NO. UNITS REQUIRED	TOTAL COST ALL UNITS	EQUIPMENT NAME OR DESCRIPTION	NO. UNITS REQUIRED	TOTAL COST ALL UNITS
<u>SHOPS</u>			<u>SECURITY/INFORMATION STATION</u>		
Oil Boom	1	9,000	Shelving, Display Racks & Files		<u>10,000</u>
Boat Travel Lift	1	33,000			
14 Ton Crane, 21' - 50' Boom	1	30,000	Subtotal		10,000
Forklift Trucks (12,000# and 10,000#)	2	35,000			
Lathes, Bandsaws & Drill Presses		<u>32,000</u>			
Subtotal		139,000			
<u>ENCLOSED WORK AREA</u>			<u>UTILITY PLANT</u>		
Net Loft Equipment		<u>5,000</u>	Misc. Equipment		<u>1,600</u>
Subtotal		5,000	Subtotal		1,600
<u>EMPLOYEE SERVICES BUILDING</u>			UNADJUSTED TOTAL		
Kitchen Equipment		277,000			960,565
Dining Room Equipment		<u>50,000</u>	BUDGET TOTAL		1,287,000
Subtotal		327,000			

1. DATE October 1976	2. FISCAL YEAR 78	3. DEPARTMENT COMMERCE	4. INSTALLATION SAND POINT, SEATTLE, WASHINGTON																																																																																																																																																																								
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<p>3. f. (Continued)</p> <p>(3) The following collateral equipment, required as a result of movement into new facilities, will be purchased by NOAA program elements. This equipment is not chargeable to the Sand Point Project.</p> <table border="1"> <thead> <tr> <th>EQUIPMENT NAME OR DESCRIPTION</th> <th>NO. UNITS REQUIRED</th> <th>TOTAL COST ALL UNITS</th> <th>EQUIPMENT NAME OR DESCRIPTION</th> <th>NO. UNITS REQUIRED</th> <th>TOTAL COST ALL UNITS</th> </tr> </thead> <tbody> <tr> <td colspan="3"><u>OPERATIONS BUILDING</u></td> <td colspan="3"><u>RESEARCH BUILDING (Continued)</u></td> </tr> <tr> <td>Drafting Tables</td> <td>2</td> <td>560</td> <td>PH Meter</td> <td>1</td> <td>1,500</td> </tr> <tr> <td>Telecopier</td> <td>1</td> <td>11,250</td> <td>Visible Recording Spectrophotometer</td> <td>1</td> <td>20,000</td> </tr> <tr> <td>Mini Computers</td> <td>3</td> <td>6,250</td> <td>H.P. 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Liquid Chromatograph	1	25,000	Equipment Racks		1,250	Carbon Analyzer	1	5,000	Books		20,000	Automatic GC Sampler	1	10,000	Map Cabinets	5	1,300	Plotter Recorder	1	3,000	Mechanical Files (Personnel)		1,500	Programmable Calculators		18,000	Computer Terminals	10	25,000	Trawl Test Tank	1	100,000	Computer Terminals (Rental)	2	10,000	Furniture & Equipment		16,000	Electronic Test Equipment		20,000	Cabinets		55,803	Untrasonic Cleaning Tank	1	5,000	Pelagic Laboratory		6,995	Drying Oven	1	2,000	Reference Collection		320	Library Furniture & Equipment		45,000	Skeleton Preparation Laboratory		715	Automatic Typewriters		10,000	All-Purpose Laboratory		307	Mailroom Equipment		12,200	Clinical Pathology Laboratory		1,530	Reproduction Equipment		4,300	Reproduction Equipment		666	Vehicle & Equipment Rental		22,500	General Files		100	Office Furniture & Equipment		36,000	Machine/Carpentry Equipment		1,405	Subtotal		79,900	Chart/Drawing Equipment		3,238	<u>RESEARCH BUILDING</u>			Electronic Equipment		9,725	Atomic Absorption System	1	27,000	Fish Holding Tanks		30,000	Vert. 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1. DATE October 1976	2. FISCAL YEAR 78	3. DEPARTMENT COMMERCE	4. INSTALLATION SAND POINT, SEATTLE, WASHINGTON
5. PROJECT NUMBER A5 B000/FJ 1101		6. PROJECT TITLE WESTERN REGIONAL CENTER	

3. f. (3) (Continued)

EQUIPMENT NAME OR DESCRIPTION	NO. UNITS REQUIRED	TOTAL COST ALL UNITS	EQUIPMENT NAME OR DESCRIPTION	NO. UNITS REQUIRED	TOTAL COST ALL UNITS
<u>RESEARCH BUILDING (Continued)</u>			<u>RESEARCH BUILDING (Continued)</u>		
Chemistry Instruments & Lab Equipment		295,000	Data Logger/Tape Radar	1	4,400
Quality/Protein Laboratory Equipment		5,000	Water Bath	1	400
Sample Preparation, Laboratory Equipment		17,000	Digital Thermometer	1	2,500
Food Spoilage/Human Pathology/Micro- biology/Fish Pathology Microbiology/ Equipment		17,000	Precision Decade Resistance Boxes		700
Electron Microscope Equipment		100,000	Dead Weight Tester	1	400
Fish Preparation/Processing Equipment		283,000	Hot Splicer	1	700
Assembly & Industrial Products Lab- oratory Equipment		78,000	Extended Processor Memory	1	25,000
Conference Room & Office Furniture & Equipment		22,200	Desk Central Processor	1	10,000
Office, Laboratory and Drafting Miscellaneous Equipment		15,200	Office Furniture & Equipment		35,500
Hardware for FFT Capability		100,000	Library Furniture & Equipment		112,000
Key Punch, Environmental Equipment and Multi-Color Analyzers		110,000	Books, Journals, Reports		156,000
Seminar Projection Equipment		26,000	Refrigerator	1	307
Shop Tools		26,000	Vacuum Pump	1	100
Calculators/Microfiche/Reader/Printer		4,400	Circulating Water Bath	1	2,000
Graphics Display Terminal	1	6,000	Freezer	2	3,000
Multimeters and Oscilloscope		18,000			
Counter Power Supply Sets		19,400			
Data Storage Cabinets & Analysis Tables		5,500			
Computer Terminals	2	12,500			
Portable Oscilloscope	1	3,000			
			Subtotal		2,278,011
<u>ELECTRONICS BUILDING</u>					
			Digitizing Table	1	80,000
			Disc Drive	1	30,000
			Electronic Test Equipment		6,000
			Office Furniture		8,000
			B-8 Stereoplotter	1	60,000

1. DATE October 1976	2. FISCAL YEAR 78	3. DEPARTMENT COMMERCE		4. INSTALLATION SAND POINT, SEATTLE, WASHINGTON	
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3. f. (3) (Continued)					
EQUIPMENT NAME OR DESCRIPTION		NO. UNITS REQUIRED	TOTAL COST ALL UNITS	EQUIPMENT NAME OR DESCRIPTION	
<u>ELECTRONICS BUILDING (Continued)</u>				<u>WAREHOUSE (Continued)</u>	
Hydroacoustics Van and Equipment		2	300,000	Office Furniture & Equipment	
Transducer Calibration Tank & Auxiliary Equipment		1	40,000	Spare Parts	
Hand Tools & Shop Instruments			36,000	Subtotal	
Storage Cabinet & Shelving			4,300		
Printed Circuit Fabrication Equipment			10,000	<u>SHOPS</u>	
Electronic Parts			20,000	Office Furniture & Equipment	
Computer Discs & Magnetic Tape			40,000		
Subtotal			634,300	Subtotal	
<u>EDUCATION BUILDING</u>				<u>ENCLOSED WORK AREA</u>	
Simulator		1	200,000	Office Furniture & Equipment	
Taping Station		1	18,000		
Weather Service Preparation Equipment			1,500	Subtotal	
Equipment Training Equipment			16,000		
Wind Tower		1	5,000	<u>EMPLOYEE SERVICES BUILDING</u>	
Subtotal			240,500	Student Furniture	
<u>WAREHOUSE</u>				Subtotal	
Forklifts		1	10,000		
Forklifts Charging Equipment			10,000		

1. DATE October 1976	2. FISCAL YEAR 78	CONSTRUCTION PROJECT DATA (Continued)		3. DEPARTMENT COMMERCE	4. INSTALLATION SAND POINT, SEATTLE, WASHINGTON
1. PROJECT NUMBER A5 B000/FJ 1101		2. PROJECT TITLE WESTERN REGIONAL CENTER			
3. f. (3) (Continued)					
EQUIPMENT NAME OR DESCRIPTION		NO. UNITS REQUIRED	TOTAL COST ALL UNITS		
<u>SECURITY/ INFORMATION STATION</u>					
Office Furniture, Files & Equipment			<u>5,000</u>		
Subtotal			5,000		
UNADJUSTED TOTAL			3,515,921		
BUDGET TOTAL			5,060,000		

1. DATE October 1976	2. FISCAL YEAR 78	CONSTRUCTION PROJECT DATA <i>(Continued)</i>	3. DEPARTMENT COMMERCE	4. INSTALLATION SAND POINT, SEATTLE, WASHINGTON
5. PROJECT NUMBER A5 B000/FJ 1101		6. PROJECT TITLE WESTERN REGIONAL CENTER		

4. PROGRAM ESTIMATE AND SCHEDULE

a. Program Estimate

The total budget estimate for the Sand Point program is \$83,842,000. Of this total, \$70,636,000 is directly related to support facilities, structures and building equipment, \$13,206,000 is related to one-time costs for program management and relocation. The percentage breakdown for the major program costs is shown below.

	FY 76 Estimate (\$ millions)	\$ (millions)	%
Site Work & Dredging	11.423	13.571	16.2
Utilities	2.790	3.315	3.9
Structures & Equipment	38.689	53.750	64.1
Design, supervision and overhead	8.782	12.540	15.0
Relocation	.555	.666	.8
Total Construction	\$ 62.239	\$83.842	100%

b. Cost Summary

The following summary tables are provided

Program Cost Summaries (total program costs)

Project Phasing Schedule

- (1) All costs are estimated in 1976 dollars in order to obtain an unadjusted engineering estimate.
- (2) The area cost factor for Seattle, Washington, is 1.026% above the national average and is reflected in the engineering estimate.
- (3) The construction contingency is 10.0% of the engineering estimate and is based on Space and Facilities Requirements Data, August 1976 and Facility Study, October 1976.

1. DATE October 1976	2. FISCAL YEAR 78	CONSTRUCTION PROJECT DATA (Continued)	3. DEPARTMENT COMMERCE	4. INSTALLATION SAND POINT, SEATTLE, WASHINGTON
5. PROJECT NUMBER A5 B000/FJ 1101		6. PROJECT TITLE WESTERN REGIONAL CENTER		

4.b. (Continued)

(4) Construction estimate (budget estimate) is obtained by multiplying the unadjusted estimate by escalation factor to the midpoint of construction. Award dates are indicated on project phasing schedules.

(5) Escalation factor is 8% per year from Engineering News Record (ENR) Index for building construction.

(6) Supervisory Inspection and Engineering Services, (SIES) is estimated at 6.0% of construction estimate with 5% for design and 1% for engineering services excluded from 6% fee limitation.

(7) Total construction management cost is estimated at 4.1% of construction estimate.

(8) Supervisory Inspection and Overhead (SIOH) for GSA is estimated at 4.4% of construction estimate.

(9) Maintenance and operation estimated at 0.5% increase per month and is from the Office Building Exchange Report (BOMA), 1975 and Building Operating Cost Summary, GSA/PBS, 1974.

(10) The mechanical work and electrical work portions of the construction will be performed by subcontractors and a 25% markup is included in the costs to cover subcontractors' overhead and profit.

(11) The general contractor's overhead and profit for supervision, indirect expense, taxes, insurance, employee benefits, plus a fair profit, is expected to be 25%; which is added to his unit costs in all but mechanical and electrical work. An additional 10% is added to the electrical and mechanical work for general contractor's overhead and profit.

(12) All construction costs were estimated on a unit price basis using the following source data:

- (a) Current negotiated construction industry prices.
- (b) Building Construction Cost Data 1976 - Robert Snow Means Company.
- (c) Process Plant Construction Estimating Standards (Richardson) 1976-77 Edition.
- (d) Quotations from selected vendors on proprietary and commercial items.

1. DATE OCTOBER 1976	2. FISCAL YEAR 1978-81	3. DEPARTMENT COMMERCE			4. INSTALLATION SAND POINT, SEATTLE, WASHINGTON				
5. PROJECT NUMBER A5B000/FJ1101		6. PROJECT TITLE WESTERN REGIONAL CENTER							
4. (Continued)		PROJECT SCHEDULE							
FISCAL YEAR QUARTER	1976 1 2 3	1977 1 2 3	1978 1 2 3	1979 1 2 3	1980 1 2 3	1981 1 2 3	1982 1 2 3	1983 1 2 3	
SITWORK		■■■■■	■■■■■	■■■■■	■■■■■	■■■■■			
UTILITIES		■■■■■	■■■■■	■■■■■	■■■■■	■■■■■			
DREDGING		■■■■■	■■■■■	■■■■■	■■■■■	■■■■■			
OPERATIONS BUILDING		■■■■■	■■■■■	■■■■■	■■■■■	■■■■■			
EMPLOYEE SERVICES			■■■■■	■■■■■	■■■■■	■■■■■			
COVERED STORAGE				■■■■■	■■■■■	■■■■■			
SHOPS				■■■■■	■■■■■	■■■■■			
PIERS		■■■■■	■■■■■	■■■■■	■■■■■	■■■■■			
UTILITIES PLANT			■■■■■	■■■■■	■■■■■	■■■■■			
ELECTRONICS BUILDING					■■■■■	■■■■■			
WAREHOUSE				■■■■■	■■■■■	■■■■■			
RESEARCH BUILDING					■■■■■	■■■■■			
ENCLOSED WORK AREA						■■■■■	■■■■■		
EDUCATION BUILDING						■■■■■	■■■■■		
SECURITY/INFORMATION						■■■■■	■■■■■		
KEY ■■■■■ DESIGN ■■■■■ CONSTRUCTION									

1. DATE October 1976	2. FISCAL YEAR 78	3. DEPARTMENT COMMERCE		4. INSTALLATION SAND POINT, SEATTLE, WASHINGTON	
5. PROJECT NUMBER A5 B000/FJ 1101		6. PROJECT TITLE WESTERN REGIONAL CENTER			

4. (Continued)

PROGRAM COST SUMMARY (\$1,000,000)								
Action Items	FISCAL YEAR						Budget Total	
	1976	1977	1978	1979	1980	1981		1982
Construction								
Site & Dredging		0.501	5.875	3.850	2.845	0.500		13.571
Utilities			1.657	1.658				3.315
Structures & Equipment			5.856	7.823	12.218	14.335	13.518	53.750
Subtotal		0.501	13.388	13.331	15.063	14.835	13.518	70.636
SIOH/SIES								
Design	0.666	0.291	0.803	0.800	0.904	0.890	0.811	5.165
Construction Management	0.041	0.021	0.549	0.547	0.618	0.608	0.554	2.938
GSA Management	0.138	0.022	0.589	0.587	0.663	0.653	0.595	3.247
NOAA Management	0.155	0.135	0.150	0.165	0.180	0.195	0.210	1.190
Relocation				0.034	0.013	0.039	0.580	0.666
Subtotal (FY76)	1.000	0.469	2.091	2.133	2.378	2.385	2.750	13.206
Total Program Costs	1.000	0.970	15.479	15.464	17.441	17.220	16.268	83.842

1. DATE October 1976	2. FISCAL YEAR 78	3. DEPARTMENT COMMERCE		4. INSTALLATION SAND POINT, SEATTLE, WASHINGTON	
5. PROJECT NUMBER A5 B000/FJ 1101		6. PROJECT TITLE WESTERN REGIONAL CENTER			

4. (Continued)

Action Items	PROGRAM COST SUMMARY (\$1,000,000)							Budget Total
	FISCAL YEAR							
	1976	1977	1978	1979	1980	1981	1982	
Site		0.501	3.100	3.850	2.845	0.500		10.796
Utilities			1.657	1.658				3.315
Dredging			2.775					2.775
Structures with Equipment								
Operations Bldg.			5.856					5.856
Employee Services				1.619				1.619
Covered Storage					0.805			0.805
Shops					2.090			2.090
Piers				3.596	4.800			8.396
Utilities Plant				2.608				2.608
Electronics Building						3.229		3.229
Warehouse					4.523			4.523
Research Building						11.106	1.110	12.216
Enclosed Work Area							1.268	1.268
Education Building							10.805	10.805
Security/Information							0.335	0.335
Subtotal		0.501	13.388	13.331	15.063	14.835	13.518	70.636
Design	0.666	0.291	0.803	0.800	0.904	0.890	0.811	5.165
Construction Management	0.041	0.021	0.549	0.547	0.618	0.608	0.554	2.938
GSA Management	0.138	0.022	0.589	0.587	0.663	0.653	0.595	3.247
NOAA Management	0.155	0.135	0.150	0.165	0.180	0.195	0.210	1.190
Relocation				0.034	0.013	0.039	0.580	0.666
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1. DATE October 1976	2. FISCAL YEAR 78	CONSTRUCTION PROJECT DATA (Continued)	3. DEPARTMENT COMMERCE	4. INSTALLATION SAND POINT, SEATTLE, WASHINGTON
5. PROJECT NUMBER A5 B000/FJ 1101		6. PROJECT TITLE WESTERN REGIONAL CENTER		

5. JUSTIFICATION FOR THE PROJECT

The justification for the project is found in both programmatic and economic considerations. The principal goals of the project are to collocate operations and consolidate NOAA elements now in dispersed locations, and to provide sufficient space for current and future programs presently located in space inadequate in both size and quality. These requirements are, in the aggregate the most serious NOAA faces anywhere in the Nation.

a. Requirement for the Project

NOAA was created to consolidate in one agency similar Federal scientific functions from a half dozen Federal agencies in order to achieve a critical mass of resources and operating authorities. This consolidation was intended to assure more effective accomplishment of national scientific service and research objectives concerning the oceans and the atmosphere. Consolidation and functional integration of heretofore separated field units is thus a crucial element in the achievement of one of the purposes of NOAA's creation. This is particularly important in Seattle where NOAA units are dispersed among seven sites. NOAA's Seattle units comprise its largest collection of activities and personnel outside the Washington, D.C. metropolitan area. The importance of Seattle activities has grown remarkably as a result of new Congressionally mandated programs in recent years. (See Appendix E for Seattle Organization and Activities.)

NOAA's purpose and mission as an agency has been given considerably favorable support by Congress since NOAA's inception in 1970. NOAA's budget has grown from just under \$200 million in 1970 to an estimated \$650 million in 1977. Several new Federal programs are significantly enlarging NOAA's activities, particularly in the Seattle area: implementation of the Fishery Management Act of 1976; Deep Ocean Mining Environmental Assessment; Puget Sound Marine Ecosystem Analysis; Outer Continental Shelf Environmental Assessment programs; and further implementation of the Marine Mammal Protection Act of 1972. Between 1970 and 1976 the number of NOAA employees increased from less than 1000 to nearly 1,300. Most of this growth has been within the last three years. Given the purpose for which NOAA was created and the substantial growth of NOAA activity in the Seattle area; and given the size and dispersion of the Seattle area operating units, NOAA recognizes a clear need for the facility planned for Sand Point as the best means of consolidating and collocating its diverse activities.

The following table presents a tabulation of the proposed housing plan.

b. Current Situation

NOAA organizations to be relocated at Sand Point are presently located at seven (7) locations in the Seattle area and at Kansas City, Missouri. The following table presents the present agency housing for NOAA. Specific organizational facilities deficiencies are:

1. DATE October 1976	2. FISCAL YEAR 78	3. DEPARTMENT COMMERCE		4. INSTALLATION SAND POINT, SEATTLE, WASHINGTON	
5. PROJECT NUMBER A5 B000/FJ 1101		6. PROJECT TITLE WESTERN REGIONAL CENTER			

5. (Continued)

COMPREHENSIVE HOUSING PLAN
(As of September 1976)

ORGANIZATION	<u>PRESENT HOUSING (OCCUPIABLE SQ. FT.)</u>				<u>PROPOSED HOUSING (OCCUPIABLE SQ. FT.)</u>				
	<u>TOTAL</u>	<u>PERSONNEL</u>	<u>GOV'T OWNED</u>	<u>LEASED</u>	<u>TOTAL</u>	<u>PERSONNEL</u>	<u>RETAINED GOV'T OWNED</u>	<u>RETAINED LEASED</u>	<u>PROPOSED PROJECT</u>
National Marine Fisheries Service	14921	67.	7500	7421	16372.	98.	--	--	16372
Northwest Fisheries Center	86079	90.	86079	--	93591	150.	--	--	93591
National Weather Service - F.O.	7605	38	--	7605	10580	50	--	--	10580
Pacific Marine Center W/Ship	--	614	--	--	--	699	--	--	--
Pacific Marine Center W/O Ship	56140	116	21000	35140	79966	126	--	--	79966
Calibration Center	5400	6	--	5400	6651	11	--	--	6651
Pacific Marine Environmental Labs.	45000	107	38000	7000	60680	180	--	--	60680
Pacific Utilization Research Center	24320	32	24320	--	29102	34	--	--	29102
Scientific Publications	3745	11	--	3745	2900	15	--	--	2900
Training Center	35000	36	35000	--	93850	59	--	--	93850
Northwest Administrative Service Office	12506	78	--	12506	54888	114	--	--	54888
General Counsel	741	5	--	741	2979	14	--	--	2979
Northwest Fisheries Center	53380	N/A	53380	--	53380	N/A	53380	--	--
Environmental Data Serv. Library	--	--	--	--	8960	3	--	--	8960
Employee Services	--	--	--	--	11620	12	--	--	11620
	<u>344837</u>	<u>1200</u>	<u>265279</u>	<u>79558</u>	<u>525519</u>	<u>1565</u>	<u>53380</u>	<u>--</u>	<u>472139</u>
Assigned Space									

1. DATE October 1976	2. FISCAL YEAR 78	3. DEPARTMENT COMMERCE	4. INSTALLATION SAND POINT, SEATTLE, WASHINGTON
5. PROJECT NUMBER A5 B000/FJ 1101		6. PROJECT TITLE WESTERN REGIONAL CENTER	

5. b. (Continued)

(1) Pacific Marine Center (PMC)

Presently located at 1801 Fairview East, ship based and shore based support is in cramped space where internal arrangements create serious operating problems. Engineering, operations and electronics shops are in diverse locations throughout the building. Lack of space requires periodic use of rental trailers during peak activity periods. Staging area is insufficient for supplying and equipping vessels during in-port periods. Pier space is inadequate for the number of vessels now assigned to PMC. Parking is insufficient for permanent staff and ship personnel. Present lease expires in 1983 and is not renewable.

(2) National Marine Fisheries Service Northwest Regional Office (NWRO):

Presently located at 1700 Westlake Ave. North, is separated on three different floors without sufficient space for significant expansion required for Extended Jurisdiction Program. No expansion space is available in this location.

(3) Northwest Administrative Services Office (NASO):

Presently located at 1700 Westlake Ave. North, is in crowded space, also without expansion required to handle workload for recent and future programs including expanded training programs.

(4) General Counsel (GC):

Located at 1700 Westlake Ave. North, is in inadequate space and will soon have to move to a new location further increasing Seattle dispersion. Space is required for staff to assist in the Extended Jurisdiction Program and Outer Continental Shelf Program.

(5) Scientific Publications (NWRO):

Is in adequate space but separated from its parent organization effective October 1, 1976 with reorganization of the NMFS. The office is separated from all other NOAA organizations.

1. DATE October 1976	2. FISCAL YEAR 78	CONSTRUCTION PROJECT DATA (Continued)	3. DEPARTMENT COMMERCE	4. INSTALLATION SAND POINT, SEATTLE, WASHINGTON
5. PROJECT NUMBER A5 B000/FJ 1101		6. PROJECT TITLE WESTERN REGIONAL CENTER		

5. b. (Continued)

(6) Pacific Marine Environmental Laboratory (PMEL):
 Dispersal at three sites causes considerable lost time in personnel travel and transportation and problems in coordination. The laboratory at 3711 15th Ave. Northwest is a former motel totally unsuitable for scientific research and experimentation. Essentially housed in motel rooms, personnel have a difficult time with electrical current for experimentation and space arrangement. Hangar 32 and the Tower Building at Sand Point are only temporarily adequate. All locations are removed from the ship base, further compounding coordination and travel problems.

(7) Northwest Fisheries Center (NFC):
 Presently has four (4) organizations dispersed in four (4) locations. The Marine Mammals Division is located in converted but inadequate space in Hangar 32 at Sand Point. Coastal Zone and Estuarines Studies Division has shops and engineering activities in Hangar 32 at Sand Point and the remainder at 2725 Montlake Blvd. RACE is to be relocated at Hangar 32 at Sand Point as the result of overcrowding at 2725 Montlake Blvd. Also effected is PURC which will move to Hangar 32 at Sand Point. Organizations not to be relocated at Sand Point and to remain at Montlake are the Marine Fish and Shellfish Division and the Pacific Utilization Research Center. All these organizations have expanded responsibilities for energy and environmental studies as the result of new legislation.

(8) Northwest Regional Calibration Center (NRCC):
 Is in adequate space in Bellvue, Washington, but is widely separated from the Pacific Marine Center creating problems for control and management. Transporation of equipment is a major problem between this organization and PMC and PMEL.

(9) NOAA Technical Training Center (TTC):
 Is housed in warehouseing space shared with NOAA's Central Logistics and Supply Center (CLSC) and the NWS Quality Control and Instrumentation Repair Branch (QCIRB). At present, adequate space is available for students, but space for staff is becoming crowded and the facility is expected to be outgrown by 1981. There is no space available at this location for other needed NOAA training activities; and therefore, the existing facility cannot support the expanding functions of CLSC and QCIB. Facilities are inadequate for student study and major problems in heating and cooling are due to conversion of warehouse space to an eductional facility. The building is scheduled for demolition by GSA in the 1980's.

1. DATE October 1976	2. FISCAL YEAR 78	CONSTRUCTION PROJECT DATA (Continued)	3. DEPARTMENT COMMERCE	4. INSTALLATION SAND POINT, SEATTLE, WASHINGTON
5. PROJECT NUMBER A5 B000/FJ 1101		6. PROJECT TITLE WESTERN REGIONAL CENTER		

5. (Continued)

COMPREHENSIVE HOUSING PLAN
(As of September 1976)

<u>ANALYSIS OF PROPOSED PROJECT</u>	<u>TOTAL</u>	<u>NET ASSIGN.</u>		<u>RETAINED GOVERNMENT OWNED SPACE</u>
		<u>SQ. FT.</u>	<u>PERSONNEL</u>	
Agency Space		451559	1477	Montlake Complex 53380 sq. ft.
Parking		--	--	
Service Areas		61560	88	<u>RETAINED LEASE</u>
1. EDS Library	8960			None
2. Employee Services	11620			
3. Covered Storage	33400			
4. Paint Storage	1900			
5. Food/Prep./Storage	500			
6. Expositive Storage	180			
7. Utilities Building	5000			
		<u>513119</u>	<u>1565</u>	
<u>TOTAL ASSIGNED SPACE</u>				<u>GOVERNMENT OWNED TO BE DISPOSED OF</u>
1/ G/O to be retained	53380			Hanger #1 58242
2/ G/O to be replaced	145079			Hanger #32 111609
3/ G/O to be reassigned	66820			Hanger #33 102170
4/ Lease space to be replaced	79558			Tower 18976
Agency Expansion	127302			Training Center <u>35000</u>
Reserve for future expansion		--	--	
TOTAL OCCUPIABLE SQ. FT.		<u>472139</u>	<u>1565</u>	
1/ NFC				
2/ NFC, PMC, PMEL				
3/ PURC, NWS, TRAIN, NMFS				
4/ NMFS, NWS-FO, PMC, NRCC, PMEL, SCI, PUB., NASO, GEN'L COUNSEL				

1. DATE October 1976	2. FISCAL YEAR 78	CONSTRUCTION PROJECT DATA (Continued)	3. DEPARTMENT COMMERCE	4. INSTALLATION SAND POINT, SEATTLE, WASHINGTON		
5. PROJECT NUMBER A5 B000/FJ 1101		6. PROJECT TITLE WESTERN REGIONAL CENTER				

5. (Continued)

PRESENT AGENCY HOUSING
(As of September 1976)

	SPACE (Net S.F.)	PERSONNEL	ANNUAL COST (\$)	EXPIRATION DATE	QUALITY RATING (GSA)	CLASS*
<u>A. LEASED SPACE TO PROPOSED PROJECT</u>						
1. 1107 NE 45th Street Scientific Publications	3745	11	28019	10-1-79	87	P
2. 1801 Fairview Ave. East Pacific Marine Center	35140	727	375000	6-30-83	90	P
3. 1700 Westlake Ave. N. Northwest Admin. Serv. Office (NASO)	12506	78	151885	10-1-77	98	P
Northwest Regional Office	7421	57	62410			
Nat'l Weather Service Forecast Office	7605	38	67589			
General Counsel	741	5				
4. 3711 15th Ave. N.E. PMEL & MESA	7000	30	87300	6-19-77	NOAA	P
5. Bellvue, Washington Calibration Center	5400	6	21862	Contractor	Leased NA	P
TOTAL LEASED SPACE	79558	952	794065			
<u>B. GOVERNMENT-OWNED SPACE TO BE RETAINED</u>						
2725 Montlake Blvd. Northwest Fisheries Center	40320	79	161900			P
Marine Fish & Shellfish Division	13060	78	19100			
Subtotal	53380	157	181000			
<u>C. GOVERNMENT-OWNED SPACE TO BE VACATED</u>						
1. 2725 Montlake Blvd. Pacific Utilization Research Center	24320	32	49900			P
2. 4735 E. Marginal Way National Marine Fisheries Center	7500	10	11504		98	P

1. DATE October 1976	2. FISCAL YEAR 78	3. CONSTRUCTION PROJECT DATA (Continued)	4. DEPARTMENT COMMERCE	5. INSTALLATION SAND POINT, SEATTLE, WASHINGTON
6. PROJECT NUMBER A5 B000/FJ 1101		7. PROJECT TITLE WESTERN REGIONAL CENTER		

5. (Continued)

PRESENT AGENCY HOUSING (Continued)
(As of September 1976)

	SPACE (Net S.F.)	PERSONNEL	ANNUAL COST (\$)	EXPIRATION DATE	QUALITY RATING	CLASS
3. Hanger #32						T
Coastal Zone & Estuarine Division	14230	11	13470			
Marine Mammals Division	18824	34	25258			
Resource Assessment & Conservation Eng.	38025	45	39900			
Pacific Marine Environmental Lab.	29650	37	--			
Pacific Marine Center	21000	3	--			
4. Hanger #33						T
National Marine Fisheries Service	15000					
5. Tower						
Pacific Marine Environmental Lab.	8350	40	--			
6. Kansas City, Mo.						
NWS Training Center	35000	36	175000	4/	90	P
TOTAL GOVERNMENT OWNED SPACE TO BE VACATED	211899	1200	315032			
TOTAL GOVERNMENT OWNED SPACE	265279					
TOTAL SPACE	344837					

Notes

1/ Annual Costs shown for Government-owned buildings represent maintenance and operation costs

2/ Hanger #33 has 97,000 S.F. of total space

3/ Tower has 18976 S.F. of total space

4/ Scheduled for demolition in 1980's

Classifications

P - Permanent Construction - Serve for 25 years or more.

S - Semipermanent Construction - Serve for 5 - 15 years.

T - Temporary Construction - Serve for less than 5 years.

* - Scheduled for demolition after 1980.

1. DATE October 1976	2. FISCAL YEAR 78	CONSTRUCTION PROJECT DATA (Continued)	3. DEPARTMENT COMMERCE	4. INSTALLATION SAND POINT, SEATTLE, WASHINGTON				
5. PROJECT NUMBER A5 B000/FJ 1101		6. PROJECT TITLE WESTERN REGIONAL CENTER						

5.		SUMMARY OF REQUIREMENTS						
		Collocation Consolidation Required	Present Space Inadequate/ Inappropriate	SPACE REQUIRED BY FY81 (SQ. FT.)				
				OFFICE	LAB.	SHOP	WAREHOUSE	TOTAL
<u>NEW ACTIVITIES</u>								
NMFS	•Environmental Impact Analysis		X	762	--	--	--	762
NASO	•Visitor/Management Information		X	--	2400	--	--	2400
<u>ACTIVITIES EXPECTED TO EXPAND</u>								
	•Regional Office Management			2240	--	--	900	3140
	•Fishery Enforcement & Surveillance		X	2004	--	--	--	2004
NMFS-RO	•Increasing use of Resources, Economics and Marketing		X	2922	--	--	--	2922
	•State Federal Fisheries Management			-320	--	--	--	-320
NWFC	•Resource Assessment & Conservation Eng. (RACE)		X	9849	-240	31011	-37280	3340
NWS	•Marine Prediction		X	1685	--	--	--	1685
	•Coastal Mapping	X		438	--	1049	--	1487
	•Hydrographic Surveys	X		4061	--	--	--	4061
PMC	•Ship Operations	X	X	--	--	305	5800	6105
	•General Support	X		1066	--	--	--	1066
	•Regional Projects & Ocean Dumping Research	X	X	87	-400	-500	-600	-1413
	•Effects of Marine Environmental Alterations	X	X	1	426	-500	100	27
PMEL	•Structures and Motion of Oceans Research	X	X	2064	2226	2400	-500	6190
	•Application of Satellite Data	X	X	1730	--	1796	--	3526
	•Office Management	X	X	4855	3395	-400	-500	7350
	•Training	X	X	3850	45450	7650	1900	58850
	•Field Finance Office	X	X	482	--	--	-123	359
	•AOD(2)	X		10327	--	--	23537	33864
NASO	•Personnel	X		4478	--	--	--	4478
	•General Counsel	X	X	2238	--	--	--	2238

1. DATE October 1976	2. FISCAL YEAR 78	3. DEPARTMENT COMMERCE	4. INSTALLATION SAND POINT, SEATTLE, WASHINGTON
5. PROJECT NUMBER A5 B000/FJ 1101		6. PROJECT TITLE WESTERN REGIONAL CENTER	

5. (Continued)

		SUMMARY OF REQUIREMENTS						
		Collocation Consolidation Required	Present Space Inadequate/ Inappropriate	SPACE REQUIRED BY FY81 (SQ. FT.)				
				OFFICE	LAB.	SHOP	WAREHOUSE	TOTAL
<u>MINOR EXPANSION EXPECTED</u>								
	•Marine Mammal Conservation	X	X	-200	--	--	--	-200
	•Endangered Species Conservation	X		-100	--	--	--	-100
	•Fisheries Grant to States	X		--	--	--	--	--
	•Anadromous Fisheries Grants	X		--	--	--	--	--
NMFS	•Economics & Commercial Fishery Statistics	X		-396	--	--	--	-396
RO	•Marine Recreational Fisheries		X	-100	--	--	--	-100
	•Fisheries Loan Fund Administration		X	421	--	--	--	421
	•Federal Ship Financing	X		--	--	--	--	--
	•Capital Construction Fund	X		--	--	--	--	--
	•Pribilof Island Program	X		449	--	--	-7500	-7051
	•Aquaculture		X	369	--	--	--	369
NWFC	•Coastal Zone & Estuarine Studies		X	1260	--	958	-1300	918
	•Marine Mammal Laboratory		X	-966	2704	316	1200	3254
	•Basic Observations	X		542	--	--	-100	442
	•Basic Communications	X		328	--	--	--	328
NWS	•Maintenance & Repair	X		262	--	--	-745	-483
	•River & Flood Forecast	X		20	--	--	--	20
	•Public Weather	X	X	640	--	-200	--	440
	•Aviation Weather	X	X	523	--	--	--	523
	•Air Pollution & Fire Weather	X		20	--	--	--	20

1. DATE October 1976	2. FISCAL YEAR 78	CONSTRUCTION PROJECT DATA (Continued)	3. DEPARTMENT COMMERCE	4. INSTALLATION SAND POINT, SEATTLE, WASHINGTON				
5. PROJECT NUMBER A5 B000/FJ 1101		6. PROJECT TITLE WESTERN REGIONAL CENTER						

5. (Continued)

		Collocation Consolidation Required	Present Space Inadequate/ Inappropriate	SUMMARY OF REQUIREMENTS SPACE REQUIRED BY FY81 (SQ. FT.)				
				OFFICE	LAB.	SHOP	WAREHOUSE	TOTAL
<u>MINOR EXPANSION EXPECTED (Continued)</u>								
PMC	•Ship Base Operations	X		3978	1989	5140	--	11107
	•Calibration Center	X	X	970	-1850	1731	400	1251
	•Resource Development & Improvement		X	128	3287	-1500	-60	1855
	•Product Quality & Safety		X	128	2804	--	1500	4432
PURC	•Nutrition and Aquaculture		X	-200	1710	-500	-40	970
	•General Support		X	395	--	--	130	525
Scientific Publications		X		-100	--	--	-745	-845
NASO	•Directorate	X		1158	--	--	--	1158
TOTAL				242032	64348	63901	48756	-14026
								162979
Unusable space at Sandpoint								
1. Hanger #1				58241				
2. Hanger #33				82000				
3. Tower				10626				
TOTAL INADEQUATE SPACE				392899				

1. DATE October 1976	2. FISCAL YEAR 78	CONSTRUCTION PROJECT DATA (Continued)	3. DEPARTMENT COMMERCE	4. INSTALLATION SAND POINT, SEATTLE, WASHINGTON
5. PROJECT NUMBER A5 B000/FJ 1101		6. PROJECT TITLE WESTERN REGIONAL CENTER		
<p>5. (Continued)</p> <p>c. <u>Impact if Project is not Provided</u></p> <p>The current facility deficiencies will continue and increase. The current dispersion location problems will be further aggravated. Space needs will not be met. The following table presents a summary, by organization, of new activities, activities expected to expand and activities expecting minor expansion with FY81 space requirements, areas to be improved by consolidation and collocation and those presently in inadequate space.</p>				

1. DATE October 1976	2. FISCAL YEAR 78	CONSTRUCTION PROJECT DATA (Continued)	3. DEPARTMENT COMMERCE	4. INSTALLATION SAND POINT, SEATTLE, WASHINGTON
5. PROJECT NUMBER A5 B000/FJ 1101		6. PROJECT TITLE WESTERN REGIONAL CENTER		

6. Justification for Scope of Project

The scope of this project is based on current and future needs. The total facility requirement is based on:

1. GSA space standards and preliminary engineering of facility requirements.
2. Analysis of location alternatives.
3. Budget and personnel projections based on planned work load.

7. Common Support Facilities

The cost estimates presented herein provide for the installation and upgrading of utilities and other support services that will be used in direct and exclusive support of the primary facility. These are explained in detail in par. 3. d(2). Cost estimates are provided for utilities for base development; and contain separate cost estimates for utilities attributable to each building. An analysis has not been performed to determine the optimum utility system. The utility and other support requirements will have to be coordinated in the development of the Master Plan. Maximum use will be made of existing utilities from NSA. NOAA will be unable to obtain steam, heat, or chilled water from the Naval Support Activity. Steam and chilled water will be provided by a central utility plant or individual building mechanical systems. All other services will be purchased. Interagency agreements have been effected on security and common services. Common support services will be utilized to the maximum extent possible between NOAA and the NSA.

1. DATE October 1976	2. FISCAL YEAR 78	3. CONSTRUCTION PROJECT DATA (Continued)	4. DEPARTMENT COMMERCE	5. INSTALLATION SAND POINT, SEATTLE, WASHINGTON
6. PROJECT NUMBER A5 B000/FJ 1101		7. PROJECT TITLE WESTERN REGIONAL CENTER		

8. Effect on Other Resources

a. Personnel

The establishment of the Western Regional Center will require twelve (12) additional personnel. As the result of collocation and consolidation of activities, positions presently used for dispersed administrative functions will be reprogrammed for program operations. Cost avoidances associated with these efficiencies are summarized in the Appendix on economic analysis. A personnel saving of fourteen (14) positions will occur from consolidating existing clerical, mail, warehousing and transportation operations. Seven (7) of these positions will be reprogrammed for the operation of the utility plant. The remaining seven (7) positions will be reprogrammed as required for facility management functions such as security and information, upon completion of the center.

b. Operations and Maintenance

Operations and Maintenance costs will become a part of the program expense of the units occupying space at Sand Point.

<u>Action Items</u>	<u>OPERATIONS AND MAINTENANCE</u> <u>FISCAL YEAR (1000's)</u>												
	<u>76</u>	<u>77</u>	<u>78</u>	<u>79</u>	<u>80</u>	<u>81</u>	<u>82</u>	<u>83</u>	<u>84</u>	<u>85</u>	<u>86</u>	<u>87</u>	<u>88</u>
Utilities	73.3	80.6	84.3	91.6	122.8	189.7	349.0	617.4	655.3	693.2	738.7	780.3	833.4
Operations & Maintenance	26.7	29.4	30.7	33.4	30.4	43.2	89.7	151.7	161.1	170.4	181.6	191.8	204.8
Minor Maintenance	11.5	12.6	13.2	14.4	19.4	25.3	52.0	94.1	99.8	105.6	112.5	118.9	126.9
Cleaning	68.5	75.4	78.8	85.6	159.6	207.7	423.2	739.7	785.1	830.4	884.9	934.8	988.4
Roads & Grounds	.3	.3	2.6	5.4	8.1	22.9	39.5	42.4	45.0	47.6	50.7	53.6	57.2
Protection Service	49.6	54.6	57.0	62.0	44.8	74.7	170.2	292.4	310.4	328.3	349.8	369.6	394.7
Painting	--	--	--	--	--	--	--	23.2	24.6	26.0	27.7	29.2	31.2
 Total Budget Estimate	 229.9	 252.9	 266.6	 292.4	 385.1	 563.5	 1123.6	 960.9	 2081.3	 2201.5	 2345.9	 2478.2	 2646.6

Expenditures are to be for operation of utility systems, roads and grounds, security and commercial power, water and sewerage. Contracts for services will be used to the maximum extent possible to reduce facility support overhead.

1. DATE October 1976	2. FISCAL YEAR 78	3. DEPARTMENT COMMERCE	4. INSTALLATION SAND POINT, SEATTLE, WASHINGTON
5. PROJECT NUMBER A5 B000/FJ 1101		6. PROJECT TITLE WESTERN REGIONAL CENTER	

8. (Continued)

c. Utilities

The cost of utilities is not included in the project estimate but is included in the operation and maintenance estimate above. Detailed explanation of utility requirements are explained in par 3.d.(2) support facilities. General utility requirements are included as part of the facility study. Energy conservation analysis to be taken in developing the master plan are detailed in par. 3.e.(2). Adequate utilities are available. Major utility requirements are:

Utility Requirements

(1) <u>Electricity</u>	(2) <u>Steam</u>	(3) <u>Chilled Water (Cooling)</u>	(4) <u>Fuel Oil</u>
Consumption 11,000,000 KWH/yr	Consumption 40,067,000 lbs./yr	Consumption 150,000 Tons/yr	Type No. 2
Peak Demand 6,758 KW	Demand 23,500 lbs./hr	Demand 855 Tons/hr	Consumption 286,000 gal/yr
Avg. Demand 5,406 KW			

9. SITING OF PROJECT

The project will be located at NOAA property adjacent the Naval Support Activity (NSA), Sand Point, Seattle, Washington.

10. GRAPHIC PRESENTATIONS & SITE PHOTOGRAPHS

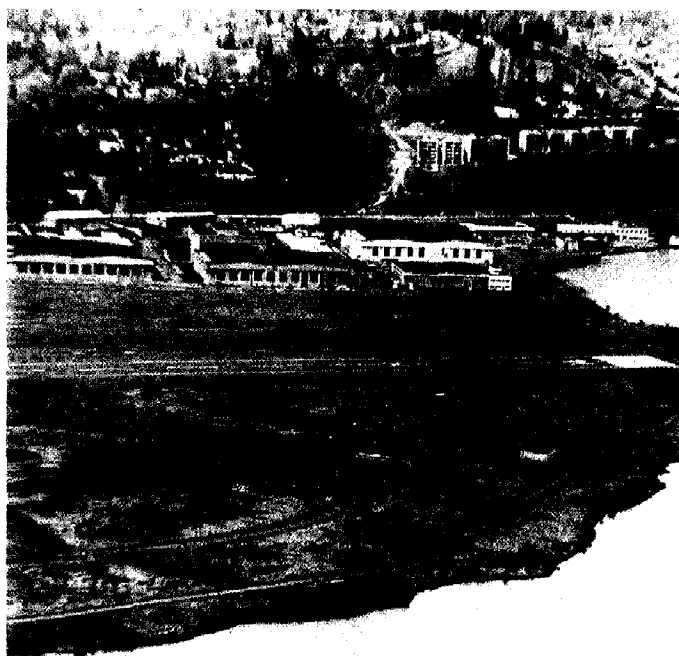
The following graphic presentations are attached to this Facility Study.

- (a) Site and Utility Plans, showing general location of buildings, roads and utilities.
- (b) Floor Plans and Sections for new buildings.
- (c) Photographs of existing facilities.

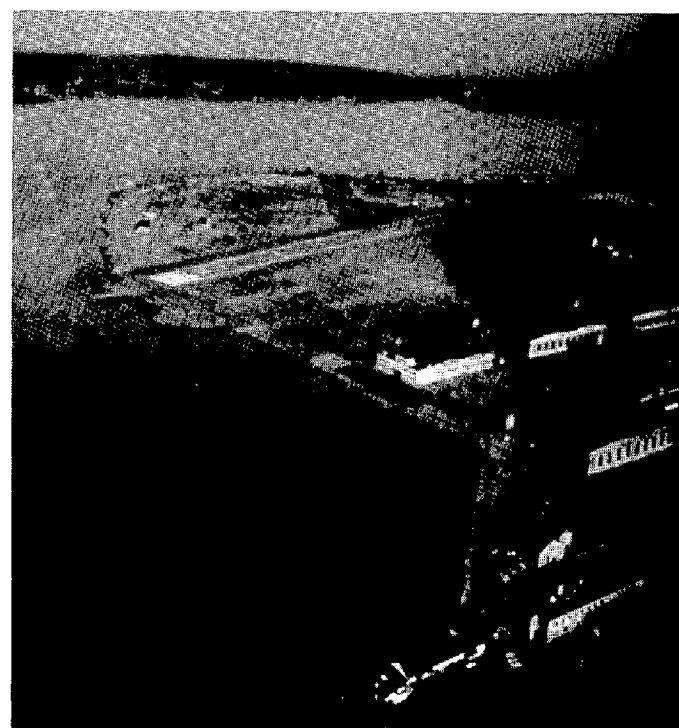
1. DATE October 1976	2. FISCAL YEAR 78	CONSTRUCTION PROJECT DATA (Continued)	3. DEPARTMENT COMMERCE	4. INSTALLATION SAND POINT, SEATTLE, WASHINGTON
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5. PROJECT NUMBER A5B000/FJ1101	6. PROJECT TITLE WESTERN REGIONAL CENTER
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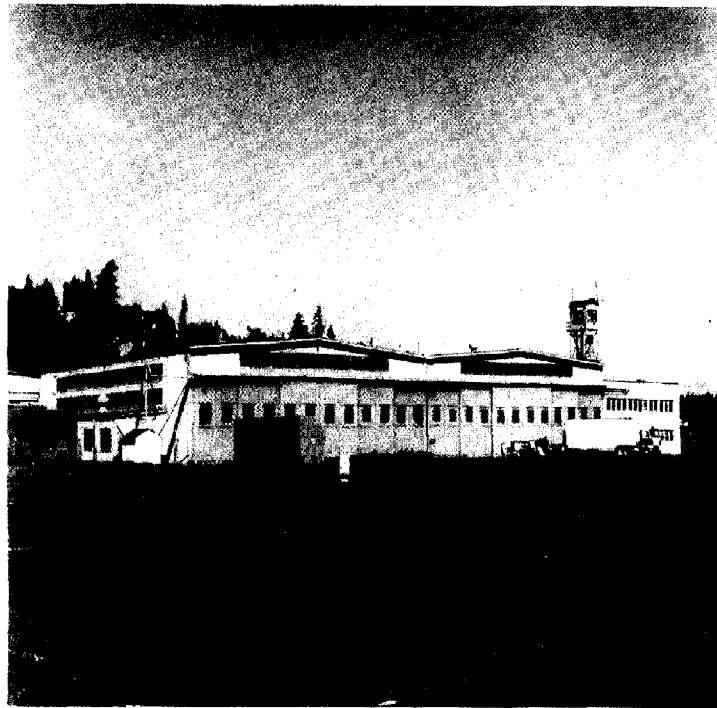
10. SITE PHOTOGRAPHS



SITE View - West (From l. to r. Hanger 32, 31, and 1)



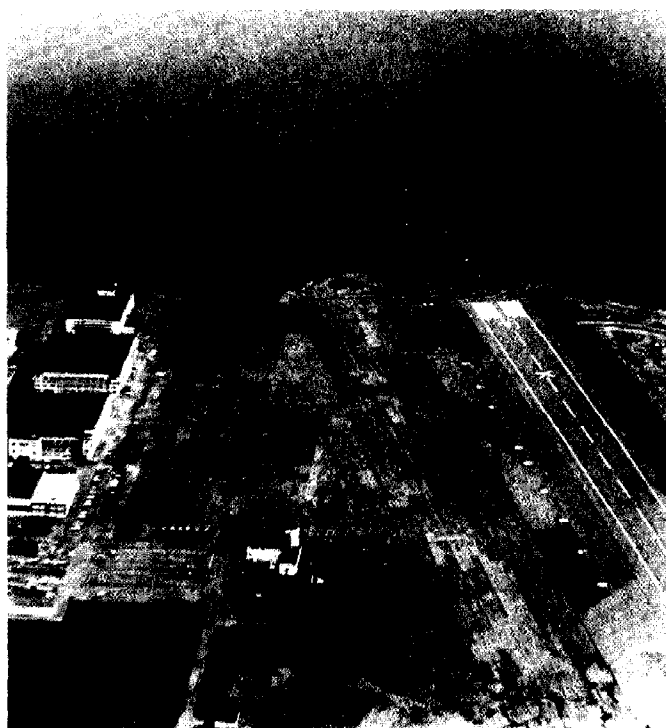
SITE View - Southeast (Lake Washington)

1. DATE October 1976	2. FISCAL YEAR 78	CONSTRUCTION PROJECT DATA (Continued)	3. DEPARTMENT COMMERCE	4. INSTALLATION SAND POINT, SEATTLE, WASHINGTON
5. PROJECT NUMBER A5B000/FJ1101		6. PROJECT TITLE WESTERN REGIONAL CENTER		
10. (continued)				
				
Hanger 33 - Interior View (open storage)		Hanger 32 - Exterior View (front)		

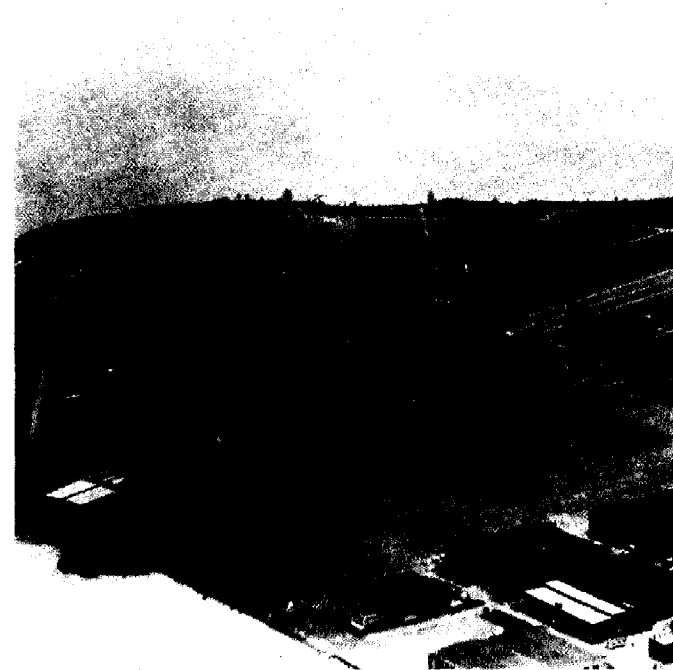
1. DATE October 1976	2. FISCAL YEAR 78	3. DEPARTMENT COMMERCE	4. INSTALLATION SAND POINT, SEATTLE, WASHINGTON
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5. PROJECT NUMBER A5B000/FJ1101	6. PROJECT TITLE WESTERN REGIONAL CENTER
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10. (continued)

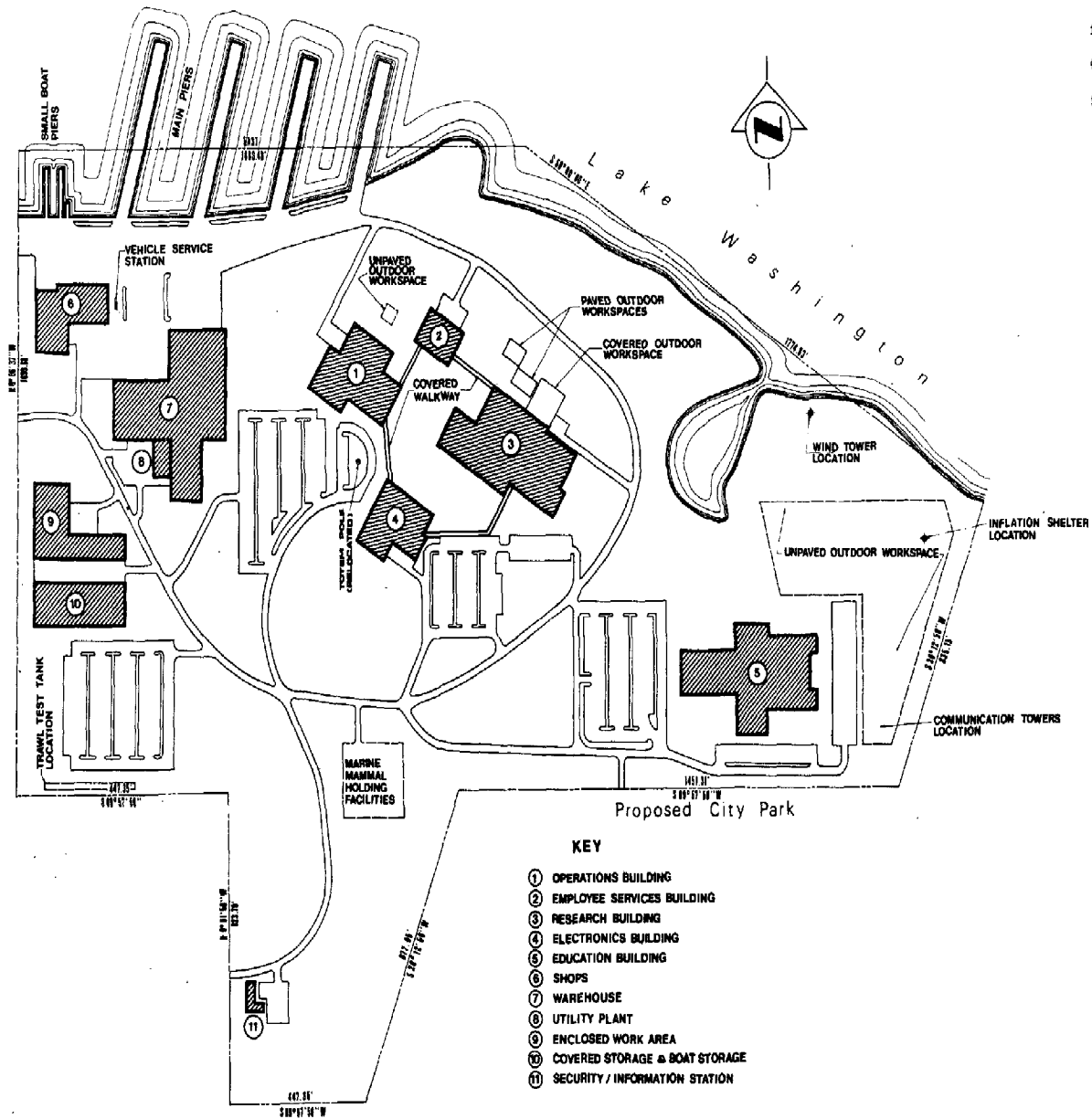


SITE View - North (Pier and NOAA Shore Line)



SITE View - Southeast (NOAA and Proposed Seattle Park area)

Naval Support Activity



- NOTES**
1. BUILDING LOCATIONS ARE APPROXIMATE. FINAL LOCATIONS SUBJECT TO DESIGN DURING ARCHITECT/ENGINEER CONCEPT STUDIES.
 2. PARKING & WORK AREAS ARE TENTATIVE. SUBJECT TO DESIGN DURING ARCHITECT/ENGINEER CONCEPT STUDIES.
 3. THIS DRAWING IS FOR ESTIMATING AND BUDGETING PURPOSES.

- KEY**
- 1 OPERATIONS BUILDING
 - 2 EMPLOYEE SERVICES BUILDING
 - 3 RESEARCH BUILDING
 - 4 ELECTRONICS BUILDING
 - 5 EDUCATION BUILDING
 - 6 SHOPS
 - 7 WAREHOUSE
 - 8 UTILITY PLANT
 - 9 ENCLOSED WORK AREA
 - 10 COVERED STORAGE & BOAT STORAGE
 - 11 SECURITY / INFORMATION STATION



NO.	DATE	REVISIONS	BY	CHKD.

DESIGNED BY: M. G. Galt
 CHECKED BY: M. Galt
 PREPARED BY: M. Galt
 DATE: 10/1/77
 PROJECT NO.: 77-100

LYON ASSOCIATES, INC.
 ENGINEERS - ARCHITECTS - PLANNERS
 7900 WESTPARK DRIVE • McLEAN, VIRGINIA • 22101

**NATIONAL OCEANIC AND
 ATMOSPHERIC ADMINISTRATION**

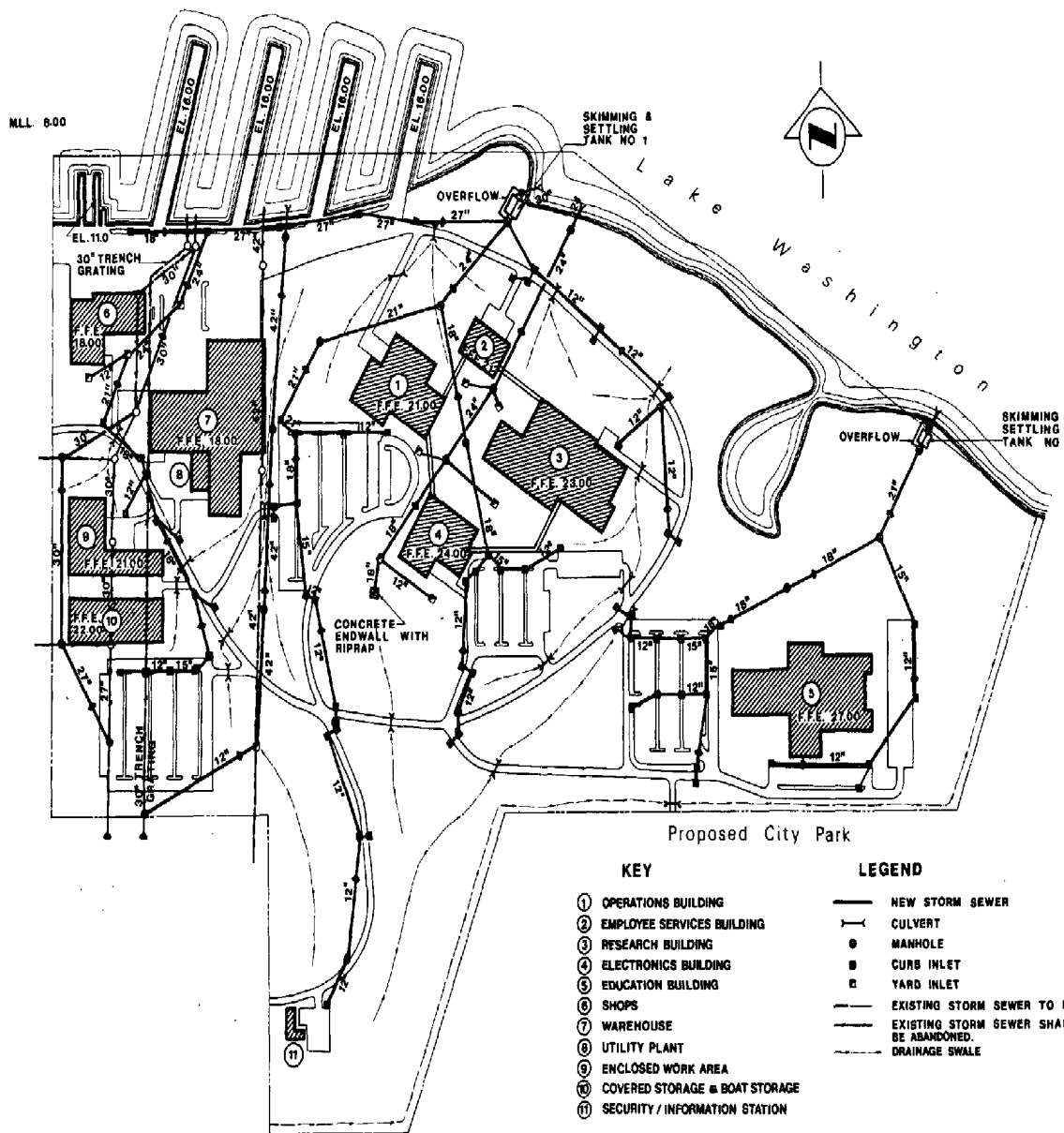


PROJECT TITLE
**WESTERN REGIONAL CENTER
 SAND POINT
 SEATTLE, WASHINGTON**

SHEET THREE
**FACILITY STUDY
 SITE PLAN**

PROJECT NO.
 77-100
 DATE
 Oct. 1977

Naval Support Activity



NOTES

STORM SEWER SYSTEM:

1. ELEVATIONS ARE BASED ON MEAN LAKE LEVEL (M.L.L. - 8.00').
2. THE STORM SEWER SYSTEM OF NOAA FACILITIES ARE SEPARATED INTO THREE SYSTEMS AS FOLLOWS:
 - a) 2 NEW LINES BEGIN SOUTH OF COVERED STORAGE & BOAT STORAGE, INTERCEPTING & PUMPAGE, & EXISTING STORM DRAINS FROM THE NAVAL SUPPORT ACTIVITY.
 - b) RUNOFF FROM PAVED AREAS IS INTO INLETS & BY PIPE TO SKIMMING & SETTLING TANKS FOR PRE-TREATMENT BEFORE ENTERING LAKE WASHINGTON.
 - c) RUNOFF FROM GRASSSED & LANDSCAPED AREAS IS CARRIED BY SWALES & CULVERTS UNDER PAVED AREAS TO LAKE WASHINGTON. IN THE VICINITY OF MAJOR BUILDINGS, THIS RUNOFF IS INTO INLETS & CARRIED BY PIPE TO THE LAKE.
3. THE TOPOGRAPHY OF THE NOAA SITE IS GENERALLY A GENTLE SLOPE. STORM SEWER PIPE SIZES ARE ASSUMED TO BE APPROXIMATELY 8.0% OR LESS.
4. ALL STORM SEWERS ARE BASED ON A 10-YR STORM.
5. ALL PAVED AREAS EXCEPT THE EDUCATION BUILDING AREA IS COLLECTED INTO SKIMMING AND SETTLING TANK NO. 1. THE PAVED AREA DRAINAGE FROM THE EDUCATION AREA IS COLLECTED INTO TANK NO. 2.
6. THE SKIMMING AND SETTLING TANKS ARE AS FOLLOWS:
 - a) TANK NO. 1:
EFF. DEPTH - D=18.0 FT.
EFF. LENGTH - L=62.0 FT.
EFF. WIDTH - W=11.0 FT.
2 BASINS, TOTAL EFFECTIVE VOLUME=V=10,000³
10 MINUTE DETENTION TIME FOR A 10 YEAR DESIGN STORM, OVERFLOW BYPASS IS PROVIDED.
 - b) TANK NO. 2:
D=18.0 FT.
L=28.0 FT.
W=18.0 FT.
TOTAL EFF. VOLUME - V=6,700³
7. ALL ROADS, PARKING AREAS AND OTHER PAVED WORKING AREAS ARE PROVIDED WITH CURBS AND GUTTERS, AND ARE PAVED ADJACENT GRASSSED AREAS TO DRAINAGE THE PAVED AREA RUNOFF FROM THE NON-PAVED AREA.
8. ROOF DRAINS OF SHOPS, WAREHOUSES, ENCLOSED WORK AREA & CON. STOR. WILL BE CONNECTED TO THE RELOCATED NEW STORM SEWER SERVING NSA AREA.
9. ROOF DRAINS OF OPERATIONS, EMPLOYEE SERVICES, RESEARCH AND ELECTRONICS BUILDINGS GROUP WILL BE CONNECTED TO THE NON-PAVED AREA STORM SEWER SYSTEM.
10. ROOF DRAIN FROM THE EDUCATION BUILDING WILL BE DRAINAGE IN THE GRASSSED AREA.
11. ROOF DRAINS ARE NOT SHOWN ON THE DRAWINGS.
12. PIPE LINES WILL BE REINFORCED CONCRETE PIPE OR ALUMINUMS CORUGATED PIPE OR CONCRETE PIPE.
13. PROVISIONS FOR STORM DRAINAGE OF OFF SITE AREAS THRU THE SITE TO BE COORDINATED WITH THE CITY OF SEATTLE.
14. THIS DRAWING IS FOR ESTIMATING AND BUDGETING PURPOSES.

KEY

- ① OPERATIONS BUILDING
- ② EMPLOYEE SERVICES BUILDING
- ③ RESEARCH BUILDING
- ④ ELECTRONICS BUILDING
- ⑤ EDUCATION BUILDING
- ⑥ SHOPS
- ⑦ WAREHOUSE
- ⑧ UTILITY PLANT
- ⑨ ENCLOSED WORK AREA
- ⑩ COVERED STORAGE & BOAT STORAGE
- ⑪ SECURITY / INFORMATION STATION

LEGEND

- NEW STORM SEWER
- - - CULVERT
- MANHOLE
- CURB INLET
- YARD INLET
- - - EXISTING STORM SEWER TO REMAIN
- - - EXISTING STORM SEWER SHALL BE ABANDONED.
- - - DRAINAGE SWALE

SCALE: 1" = 100'



DESIGNED BY: M. Collier	DATE: 11/11/78
CHECKED BY: M. Davis	DATE: 11/11/78
PROJECT: 11/11/78	DATE: 11/11/78
FILE: 11/11/78	DATE: 11/11/78
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11/11/78	DATE: 11/11/78

LYON ASSOCIATES, INC.
ENGINEERS - ARCHITECTS - PLANNERS
7000 WESTPARK DRIVE • MCLEAN, VIRGINIA • 22101

**NATIONAL OCEANIC AND
ATMOSPHERIC ADMINISTRATION**



PROJECT TITLE
**WESTERN REGIONAL CENTER
SAND POINT
SEATTLE, WASHINGTON**

WORK TITLE
**FACILITY STUDY
STORM DRAINAGE SYSTEM**

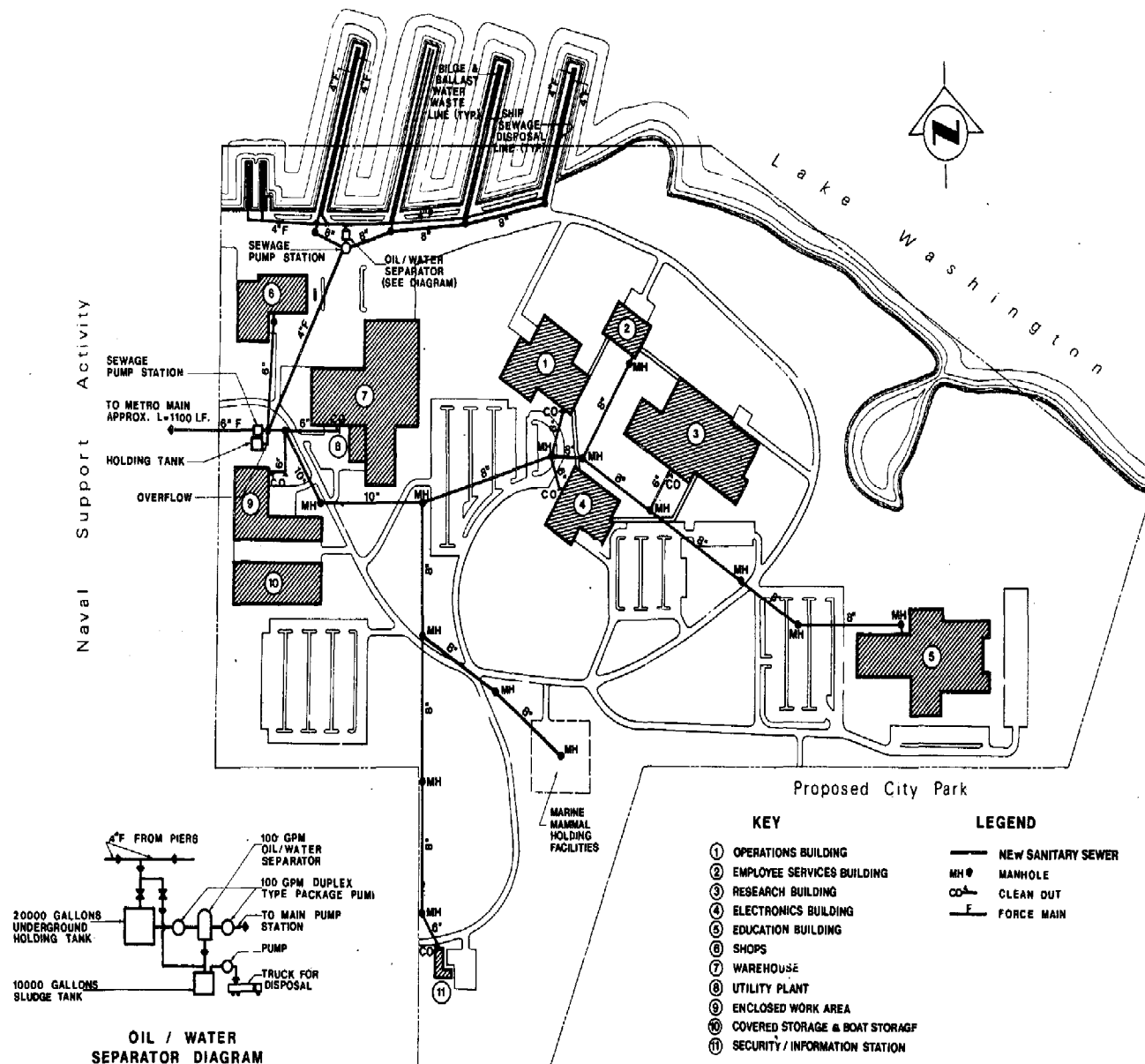
PROJECT NO.
11/11/78
DATE
11/11/78

NOTES

SANITARY SEWER

1. THE SEWAGE SYSTEM FOR THE ENTIRE NOAA AREA IS BASED ON A PEAK FLOW OF 500 GPM OF WHICH 450 GPM IS FROM BUILDINGS AND 100 GPM IS FROM THE PIER AREA.
2. SEWAGE FROM ALL BUILDINGS WILL BE COLLECTED BY GRAVITY SEWERS INTO THE WESTWELL OF THE MAIN SEWAGE PUMP STATION LOCATED TO THE NORTH OF THE ENCLOSED WORK AREA.
3. THE MAXIMUM DISTANCE BETWEEN MANHOLES IS 400 FEET AND THE MINIMUM PIPE SIZE BETWEEN MANHOLES IS 8 INCHES.
4. THE MAIN PUMP STATION SHALL INCLUDE THE FOLLOWING:
 - A 6-INCH FORCE MAIN APPROX. 1500' UP TO THE METRO MAIN.
 - TWO VARIABLE SPEED PUMPS & MOTORS 550 GPM AGAINST 26 FT. HEAD PUMP 25 HP MOTOR
 - ONE 25 HP EMERGENCY ENGINE
 - ONE WESTWELL
 - ONE 50,000 GAL. CAPACITY UNDERGROUND HOLDING TANK WITH 24-HR. RETENTION CAPACITY FOR MAXIMUM DAILY FLOW EFFECTIVE VOLUME OF 4000 GPD (INCLUDES THE FLOW FROM PIER AREA)
5. EACH MAIN PIER HAS A DUDGE & BALLAST WASTE LINE AND A COMBINED SEWAGE LINE FROM SLIPS, THE DUDGE AND BALLAST WASTE LINE IS A 4-INCH FORCE MAIN AND THE COMBINED SEWAGE LINE IS A COMBINED 4-INCH FORCE MAIN WITH AN 8-INCH GRAVITY SEWER.
6. THE SMALL DOCK PIER HAS ONLY DUDGE & BALLAST WASTE LINES.
7. DUDGE & BALLAST WASTE WILL BE TREATED THEN THE OIL-WATER SEPARATION, THEN IT WILL BE PUMPED INTO THE MAIN PUMP STATION.
8. THE OIL-WATER SEPARATING SYSTEM SHALL INCLUDE THE FOLLOWING:
 - ONE 10,000 GAL. CAPACITY HOLDING TANK.
 - ONE 100 GPM OIL-WATER SEPARATION.
 - ONE 1000 GPM CAPACITY GULCH TANK.
 - A 4-INCH FORCE MAIN APPROX. 600' UP TO THE MAIN PUMP STATION.
9. ALL FORCE MAINS WILL BE CAST IRON PIPE OR DUCTILE CAST IRON PIPE WITH CEMENT MORTAR LINING (ANNA C-15) AND GRAVITY SEWERS ARE CONCRETE PIPE OR ADAPTED CEMENT PIPE OR VITRIFIED CLAY PIPE.
10. THIS DRAWING IS FOR ESTIMATING AND BUDGETING PURPOSES.

Naval Support Activity



Proposed City Park

KEY

- 1 OPERATIONS BUILDING
- 2 EMPLOYEE SERVICES BUILDING
- 3 RESEARCH BUILDING
- 4 ELECTRONICS BUILDING
- 5 EDUCATION BUILDING
- 6 SHOPS
- 7 WAREHOUSE
- 8 UTILITY PLANT
- 9 ENCLOSED WORK AREA
- 10 COVERED STORAGE & BOAT STORAGE
- 11 SECURITY / INFORMATION STATION

LEGEND

- NEW SANITARY SEWER
- MH MANHOLE
- CO CLEAN OUT
- F FORCE MAIN

SCALE 1" = 100'



NO.	DATE	REVISION	BY	CD	APPV

REVIEW BY: M. Collier
 CHECKED BY: M. Collier
 PREP. BY: M. Jorgensen
 ENG. DES. APPV: C. Gagliardi III
 PROJ. MGR. APPV: R.L. Corbett

LYON ASSOCIATES, INC.
 ENGINEERS - ARCHITECTS - PLANNERS
 7800 WESTPARK DRIVE • McLEAN, VIRGINIA 22101

**NATIONAL OCEANIC AND
 ATMOSPHERIC ADMINISTRATION**



PROJECT TITLE
**WESTERN REGIONAL CENTER
 SAND POINT
 SEATTLE, WASHINGTON**

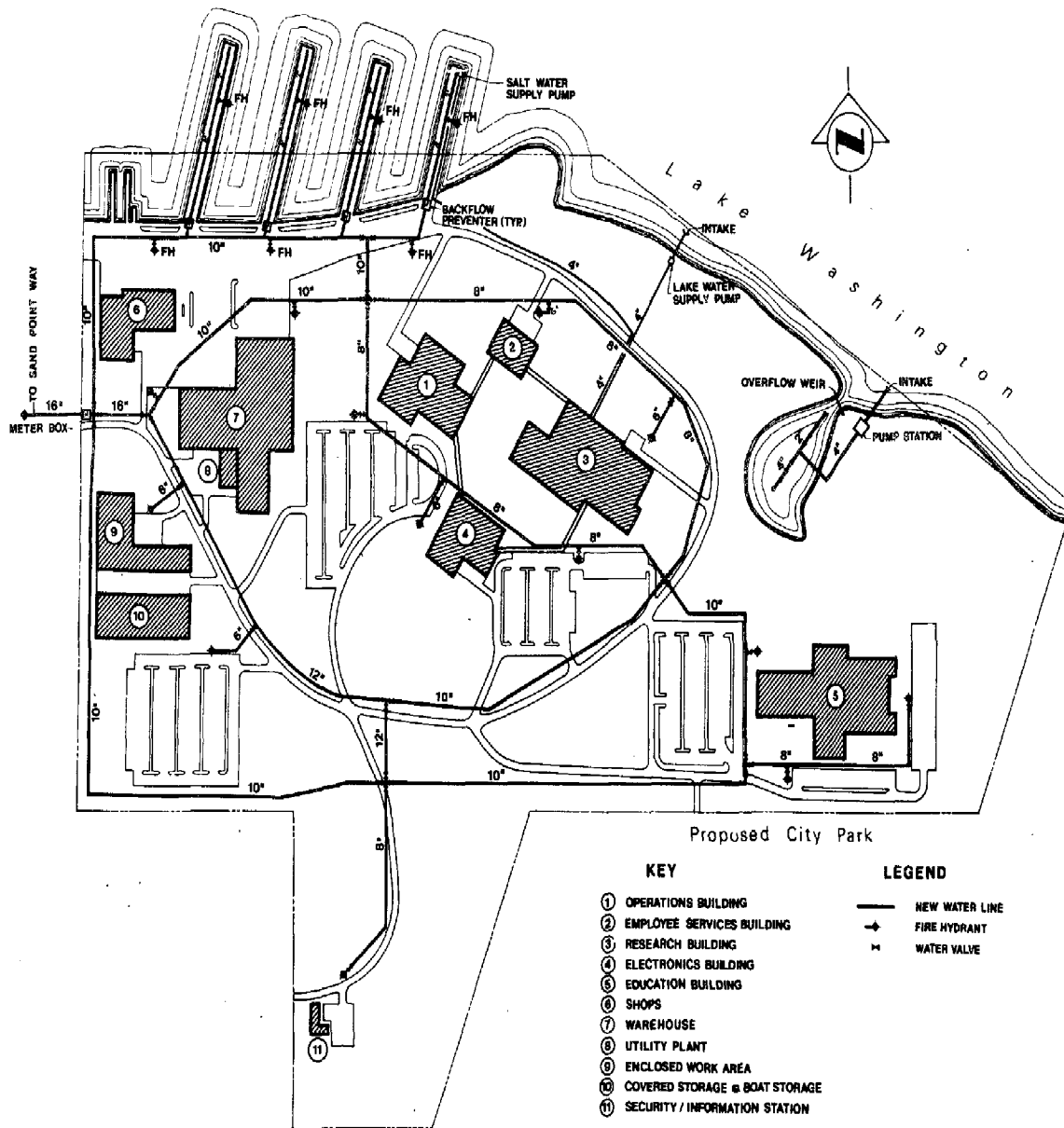
SHEET TITLE
**FACILITY STUDY
 SANITARY SEWER SYSTEM**

PROJECT NO.
 621101

SHEET NO.
 2 OF 4

DATE
 Oct. 1976

Naval Support Activity



KEY

- ① OPERATIONS BUILDING
- ② EMPLOYEE SERVICES BUILDING
- ③ RESEARCH BUILDING
- ④ ELECTRONICS BUILDING
- ⑤ EDUCATION BUILDING
- ⑥ SHOPS
- ⑦ WAREHOUSE
- ⑧ UTILITY PLANT
- ⑨ ENCLOSED WORK AREA
- ⑩ COVERED STORAGE & BOAT STORAGE
- ⑪ SECURITY / INFORMATION STATION

LEGEND

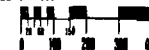
- NEW WATER LINE
- FIRE HYDRANT
- WATER VALVE

NOTES

WATER DISTRIBUTION SYSTEM:

1. THE WATER DISTRIBUTION SYSTEM IS A COMBINED FIRE & DOMESTIC WATER SUPPLY SYSTEM, CONSISTING OF SEVERAL LOOPS, WITH PIPE SIZED 8 INCHES THRU 12 INCHES.
2. ONE 8-INCH MAIN IS TAPPED INTO THE CITY MAINS ON SAND POINT WAY.
3. A WATER METER IS PROVIDED FOR THE MAIN AT THE NORTH GATE.
4. METERS ARE HERSEY DETECTOR METER, MODEL PM-67, PM-MCT OR EQUAL.
5. INSTALLED IN A CONCRETE BOX AND HAVING A BY-PASS LINE.
6. THE SYSTEM IS BASED ON A USE OF 8,000 GPM FOR FIRE PROTECTION PLUS 800 GPM FOR PEAK DOMESTIC WATER, COOLING WATER AND STEAM MAKE-UP WATER.
7. THE DOMESTIC WATER SERVICES LINES TO ALL BUILDINGS AS WELL AS THE SPRINKLER WATER SUPPLY LINES TO SHOPS, THE WAREHOUSE, ENCLOSED WORK AREA AND COVERED STORAGE, ARE NOT SHOWN ON THE DRAWING.
8. EACH PISA HAS AN 8-INCH WATER MAIN WITH A BACKFLOW PREVENTER FOR SHIP SERVICE CONNECTIONS.
9. THE MINIMUM COVER FOR WATER LINES IS 4'-0". CONCRETE THROUST BLOCKS ON HANGING BLOCKS SHALL BE PROVIDED AT ALL HORIZONTAL OR VERTICAL BENDS.
10. WATER LINES SHALL BE SEPARATED FROM POWER LINES BY AT LEAST 10 FEET HORIZONTALLY.
11. FIRE HYDRANTS SHALL BE SPACED AT A MINIMUM OF 400 FEET. HYDRANTS WILL BE PLACED NOT MORE THAN 7 FEET FROM ROAD CURBS. HYDRANTS IN THE PARKED AREA WILL BE PROTECTED BY GUARD RAILS.
12. THE WATER MAIN TO BE DUCTILE CAST IRON PIPE (ANNU G 15), GEMENT MORTAR LIND ON ADEQUEST CEMENT PRESURE PIPE (ASTM G 15G).
13. THIS DRAWING IS FOR ESTIMATING AND DUCTING PURPOSES.

SCALE: 1" = 100'



NO.	DATE	REVISION	BY	CHK.	APP.

DESIGNED BY: M. Collier
CHECKED BY: M. Smith
PROJECT: M. Smith
DATE: 10/1/78
BY: M. Smith
APP: M. Smith

LYON ASSOCIATES, INC.
ENGINEERS - ARCHITECTS - PLANNERS
7000 WESTPARK DRIVE • MCLEAN, VIRGINIA • 22101

**NATIONAL OCEANIC AND
ATMOSPHERIC ADMINISTRATION**

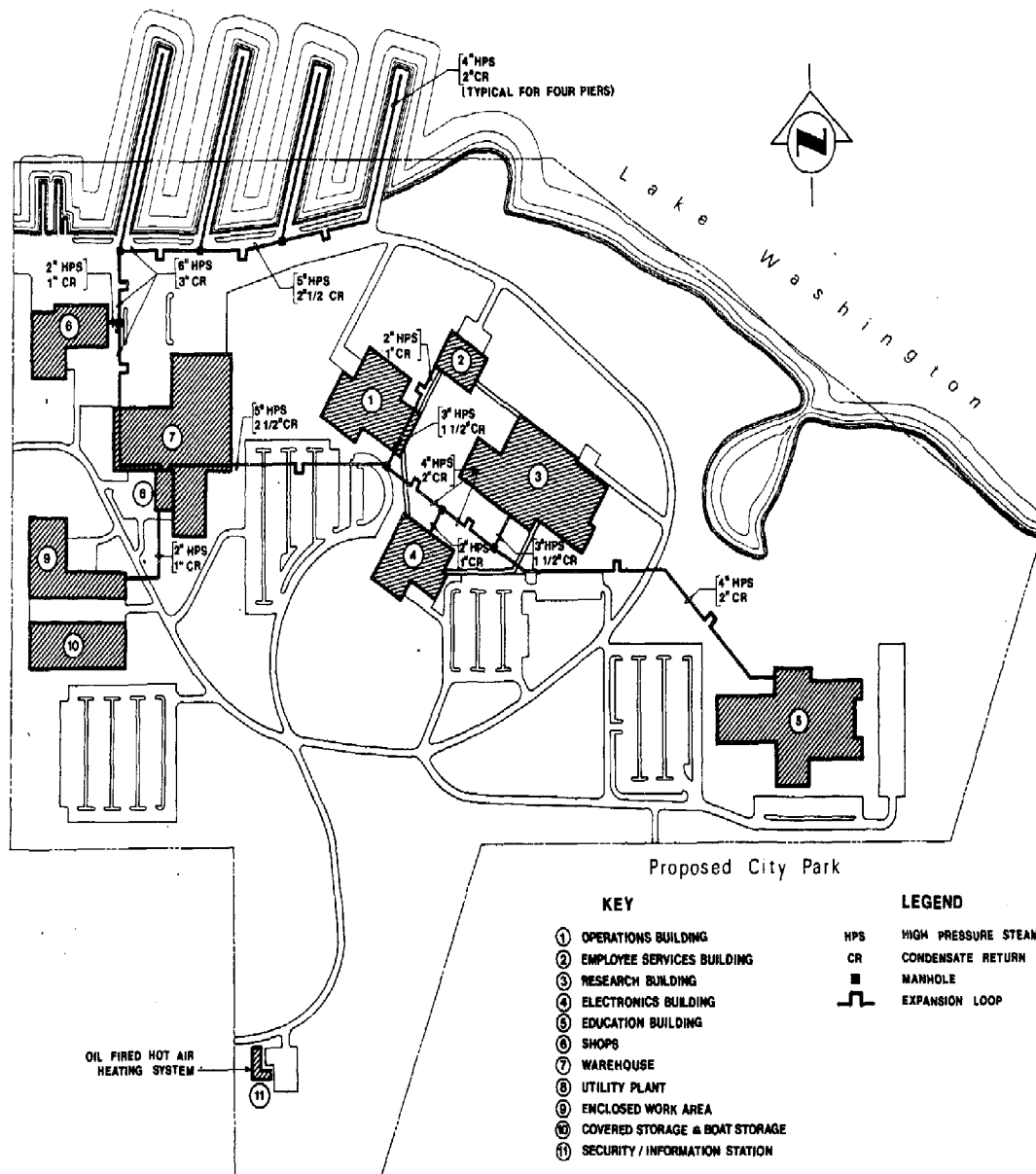


PROJECT TITLE
**WESTERN REGIONAL CENTER
SAND POINT
SEATTLE, WASHINGTON**

SHEET TITLE
**FACILITY STUDY
WATER DISTRIBUTION SYSTEM**

PROJECT NO.
100-1000
DATE
10/1/78
BY
M. Smith
APP
M. Smith

Naval Support Activity



NOTES

1. STEAM DISTRIBUTION SYSTEM PIPING WILL BE INSULATED AND WRAPPED STANDARD WEIGHT BLACK STEEL ENCLOSED IN A CONCRETE ENVELOPE.
2. ALL PIPES & BUILDINGS REQUIRING HEATING WILL BE SERVED FROM THE STEAM DISTRIBUTION SYSTEM WITH THE EXCEPTION OF THE SECURITY/INFORMATION STATION WHICH WILL HAVE A SEPARATE OIL FIRED HOT AIR SYSTEM.
3. SIZING OF PIPING MAINS REFLECTED ON THIS DRAWING INCLUDES A 25% ALLOWANCE FOR FUTURE GROWTH OF THE FACILITY.
4. ALL CONCRETE STEAM ENVELOPES SHALL BE LOCATED A MINIMUM OF THREE FEET BELOW FINISHED GRADE.
5. ENVELOPES SHALL DRAIN TO MANHOLE SUMP PITS & BE EVACUATED BY STEAM OPERATED SIPHON EFFECTS TO STORM DRAINAGE SYSTEM.
6. FINAL HEATING SYSTEM WILL BE DETERMINED AFTER BUDGETARY CONSIDERATION STUDIES UNDERTAKEN AS PART OF THE ARCHITECT/ENGINEER CONCEPT STUDIES.
7. THIS DRAWING IS FOR ESTIMATING AND BUDGETING PURPOSES.

KEY

- 1 OPERATIONS BUILDING
- 2 EMPLOYEE SERVICES BUILDING
- 3 RESEARCH BUILDING
- 4 ELECTRONICS BUILDING
- 5 EDUCATION BUILDING
- 6 SHOPS
- 7 WAREHOUSE
- 8 UTILITY PLANT
- 9 ENCLOSED WORK AREA
- 10 COVERED STORAGE & BOAT STORAGE
- 11 SECURITY / INFORMATION STATION

LEGEND

- HPS HIGH PRESSURE STEAM LINE
CR CONDENSATE RETURN LINE
MANHOLE
EXPANSION LOOP

SCALE: 1" = 100'



DESIGNED BY	M. Galtier
CHECKED BY	M. Galtier
PROJECT NO.	100-100
DATE	10/1/76
BY	10/1/76
DATE	10/1/76
BY	10/1/76
DATE	10/1/76
BY	10/1/76
DATE	10/1/76
BY	10/1/76
DATE	10/1/76

LYON ASSOCIATES, INC.
ENGINEERS - ARCHITECTS - PLANNERS
7000 WESTPARK DRIVE • MCLEAN VIRGINIA - 22101

**NATIONAL OCEANIC AND
ATMOSPHERIC ADMINISTRATION**

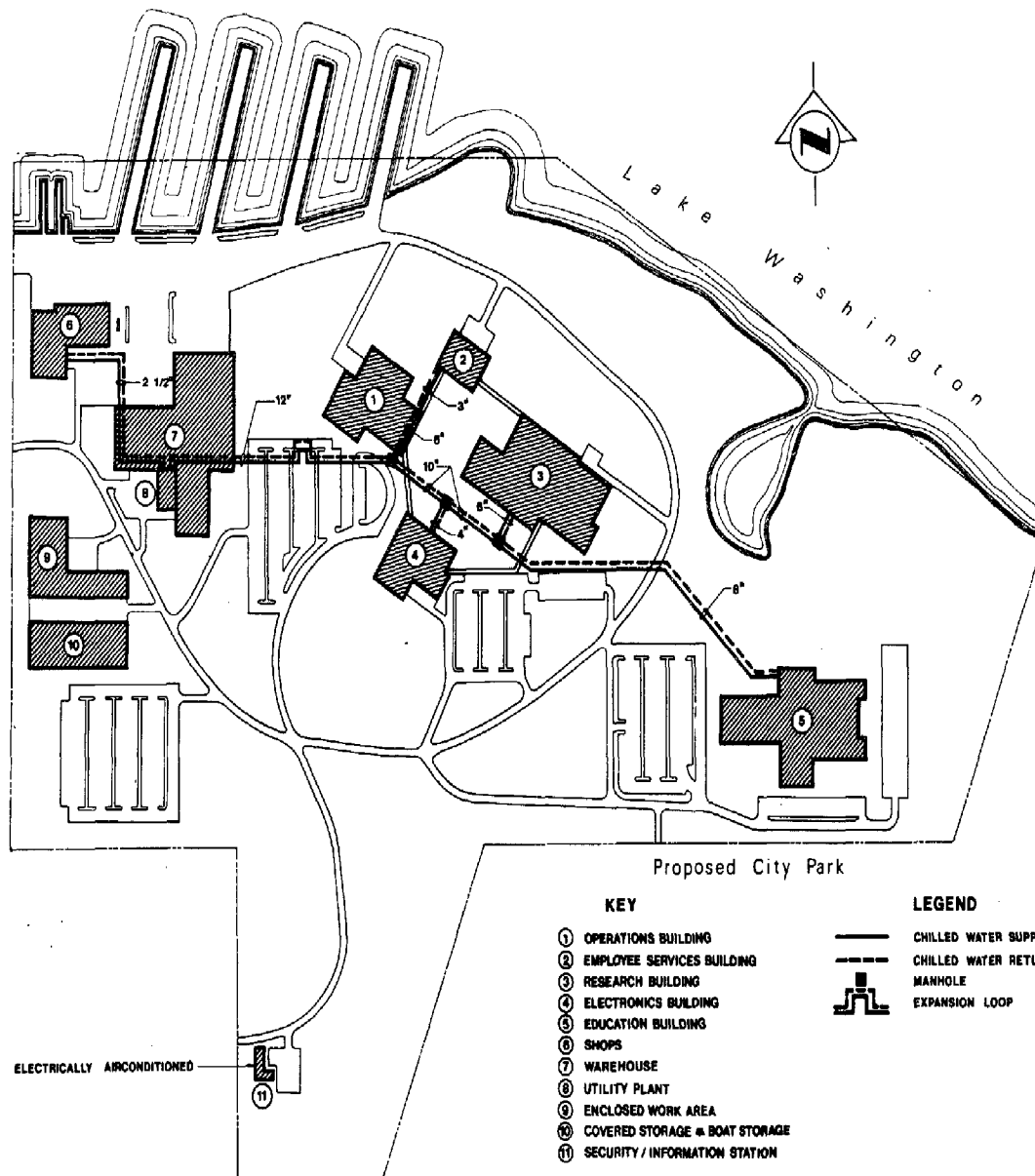


PROJECT TITLE
**WESTERN REGIONAL CENTER
SAND POINT
SEATTLE, WASHINGTON**

DRAWING TITLE
**FACILITY STUDY
STEAM DISTRIBUTION SYSTEM**

PROJECT NO.
100-100
DATE
10/1/76

Naval Support Activity



KEY

- ① OPERATIONS BUILDING
- ② EMPLOYEE SERVICES BUILDING
- ③ RESEARCH BUILDING
- ④ ELECTRONICS BUILDING
- ⑤ EDUCATION BUILDING
- ⑥ SHOPS
- ⑦ WAREHOUSE
- ⑧ UTILITY PLANT
- ⑨ ENCLOSED WORK AREA
- ⑩ COVERED STORAGE & BOAT STORAGE
- ⑪ SECURITY / INFORMATION STATION

LEGEND

- CHILLED WATER SUPPLY
- - - CHILLED WATER RETURN
- ⊕ MANHOLE
- ⊕ EXPANSION LOOP

SCALE: 1" = 100'



NOTES

CHILLED WATER DISTRIBUTION:

1. CHILLED WATER DISTRIBUTION SYSTEM PIPING SHALL BE PREINSULATED, PREFABRICATED, JACKBOLTED AND INSTALLED AT A MINIMUM OF FIVE FEET BELOW FINISHED GRADE.
2. SIZING OF PIPING HANDS REFLECTED ON THIS DRAWING INCLUDES A 25% ALLOWANCE FOR FUTURE GROWTH OF THE FACILITY.
3. IN AREAS WHERE CHILLED WATER AND STEAM ENVELOPES RUN PARALLEL, A 15 FOOT SEPARATION DISTANCE SHALL BE MAINTAINED.
4. ALL BUILDINGS REQUIRING COOLING WILL BE SERVED FROM THE CHILLED WATER DISTRIBUTION SYSTEM WITH THE EXCEPTION OF THE SECURITY/INFORMATION STATION WHICH WILL HAVE A SELF-CONTAINED ELECTRICALLY OPERATED SPLIT-SYSTEM.
5. FINAL COOLING SYSTEM WILL BE DETERMINED AFTER ENERGY CONSERVATION STUDIES UNDER-TAKEN AS PART OF THE ARCHITECT/ENGINEER CONCEPT STUDIES.
6. THIS DRAWING IS FOR ESTIMATING AND BUDGETING PURPOSES.

NO.	DATE	REVISION	BY	SA	APP.

DESIGNED BY: M. Collier
 CHECKED BY: M. Powell
 PLO: M. Collier
 100 1000 APP: C. Conner
 PLO: M. Collier

LYON ASSOCIATES, INC.
 ENGINEERS · ARCHITECTS · PLANNERS
 7000 WESTYORK DRIVE · McLEAN, VIRGINIA · 22101

**NATIONAL OCEANIC AND
 ATMOSPHERIC ADMINISTRATION**



PROJECT TITLE
**WESTERN REGIONAL CENTER
 SAND POINT
 SEATTLE, WASHINGTON**

SHEET TITLE
**FACILITY STUDY
 CHILLED WATER
 DISTRIBUTION SYSTEM**

PROJECT NO.
EST-1001
 DATE
10/1/78
 SHEET
10/1/78

NOTES

ELECTRICAL:

1. RECTANGULAR POWER SHALL BE PROVIDED BY THE SEATTLE CITY LIGHT CO. AT 16 KV TO A UTILITY PURCHASED POWER TRANSFORMER.
2. DISTRIBUTION THROUGHOUT THE SITE SHALL BE 16 KV, 3 PHASE, ETHYLENE PROPYLENE INSULATED CABLE IN CONCRETE ENCASED DUCTS.
3. LOCAL SUBSTATIONS SHALL BE PROVIDED INSIDE & OUTSIDE BUILDINGS AS INDICATED.
4. INTERNAL BUILDING DISTRIBUTION SHALL BE 480 VOLTS, 3 PHASE, 4 WIRE WITH LOCAL DRY TYPE TRANSFORMERS FOR 120 V POWER.
5. PIER DISTRIBUTION: 220/110 V, 1 PHASE & 440 VOLT, 3 PHASE POWER SHALL BE PROVIDED TO RECEPTACLES FOR SHORE TO SHIP POWER.
6. LIGHTING:
 - a) OUTDOOR LIGHTING - MERCURY VAPOR.
 - b) INDOOR LIGHTING - MERCURY VAPOR & FLUORESCENT.
7. TELEPHONE SYSTEM:
 - a) AN UNDERGROUND DUCT SYSTEM RUNNING PARALLEL TO THE POWER SYSTEM SHALL BE PROVIDED WITH ALL CABLES PURCHASED AND INSTALLED BY THE TELEPHONE COMPANY.
8. CENTRAL CONTROL CONSOLE:
 - a) A CONTROL SYSTEM FOR ALL BUILDINGS SYSTEMS SHALL BE PROVIDED IN THE OPERATIONS BLDG. FOR CONTROL & REPORTING OF THE FOLLOWING LOCAL BUILDING SYSTEMS (DABLE IN CONDUIT):
 - i) AIR CONDITIONING
 - ii) PUBLIC ADDRESS
 - iii) FIRE ALARM
 - iv) SECURITY
 - v) ENERGY CONSERVATION
 - b) ELECTRICAL LOADS:
 - CONNECTED - 7500 KVA
 - DEMAND - 6000 KVA
 - c) FINAL LOCATION OF MAIN SUBSTATION TO BE DETERMINED DURING ARCHITECT/ENGINEER CONCEPT STUDIES.
9. THIS DRAWING IS FOR ESTIMATING AND BUDGETING PURPOSES.

SCALE: 1" = 100'



Naval Support Activity

MAIN SUBSTATION
METERING COMPARTMENT
26KV UG FROM SEATTLE CITY LIGHT COMPANY
PACIFIC NORTHWEST BELL TELEPHONE COMPANY

Lake Washington

WIND TOWER LOCATION

COMMUNICATION TOWERS LOCATION

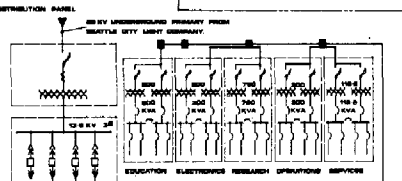
Proposed City Park

MARINE MAINTENANCE FACILITIES

DIRECT BURIAL CABLES

LEGEND

- TRANSFORMER
- FUSED LOAD BREAK SW
- AIR CIRCUIT BREAKER - 12.5 KV
- MANHOLE
- CIRCUIT BREAKER - 480 V
- MAIN DISTRIBUTION PANEL



ELECTRICAL DISTRIBUTION SYSTEM

KEY

- 1 OPERATIONS BUILDING
- 2 EMPLOYEE SERVICES BUILDING
- 3 RESEARCH BUILDING
- 4 ELECTRONICS BUILDING
- 5 EDUCATION BUILDING
- 6 SHOPS
- 7 WAREHOUSE
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- 9 ENCLOSED WORK AREA
- 10 COVERED STORAGE & BOAT STORAGE
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LEGEND

- TRANSFORMER
- POWER MANHOLE
- COMMUNICATION MANHOLE
- ELECTRIC LINE
- COMMUNICATION LINE

LYON ASSOCIATES, INC.
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7900 WESTPARK DRIVE - McLENNAN, VIRGINIA - 22101

NATIONAL OCEANIC AND
ATMOSPHERIC ADMINISTRATION

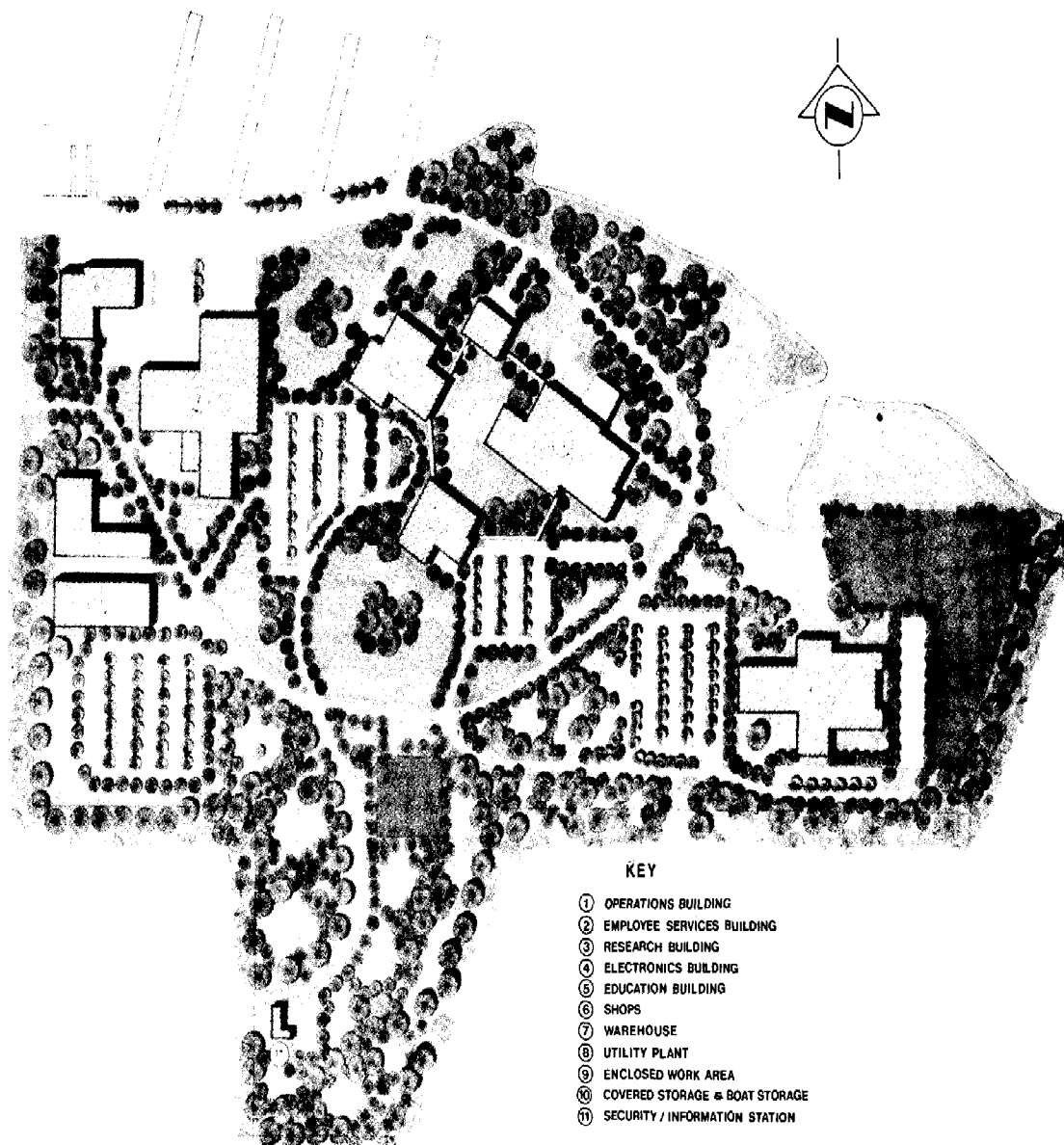


WESTERN REGIONAL CENTER
SAND POINT
SEATTLE, WASHINGTON

FACILITY STUDY
ELECTRICAL DISTRIBUTION
AND COMMUNICATIONS

PROJECT NO. ASD-000
1-21101
DATE
As Shown
REV. 5-3
10/1/78

NO.	DATE	BY	CHK	APP
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KEY

- ① OPERATIONS BUILDING
- ② EMPLOYEE SERVICES BUILDING
- ③ RESEARCH BUILDING
- ④ ELECTRONICS BUILDING
- ⑤ EDUCATION BUILDING
- ⑥ SHOPS
- ⑦ WAREHOUSE
- ⑧ UTILITY PLANT
- ⑨ ENCLOSED WORK AREA
- ⑩ COVERED STORAGE & BOAT STORAGE
- ⑪ SECURITY / INFORMATION STATION

SCALE: 1" = 100'



NO.	DATE	REVISION	BY	CHK	APP

DESIGNED BY: Y. Ben
 CHECKED BY: E. Margalit
 1980: MBE: M. Jorgel
 1981: 1982: 1979: C. G. G. G. G. G.
 1983: 1984: 1979: A. L. G. G. G.

LYON ASSOCIATES, INC.
 ENGINEERS - ARCHITECTS - PLANNERS
 7900 WESTPARK DRIVE - McLEANS, VIRGINIA - 22101

**NATIONAL OCEANIC AND
 ATMOSPHERIC ADMINISTRATION**



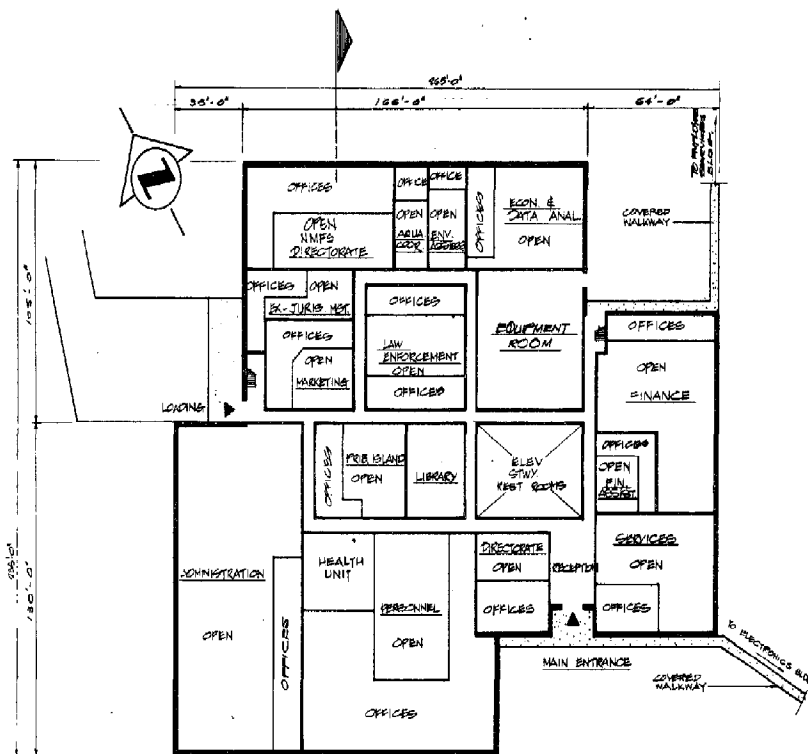
PROJECT TITLE
**WESTERN REGIONAL CENTER
 SAND POINT
 SEATTLE, WASHINGTON**

SHEET TITLE
**FACILITY STUDY
 LANDSCAPE PLAN**

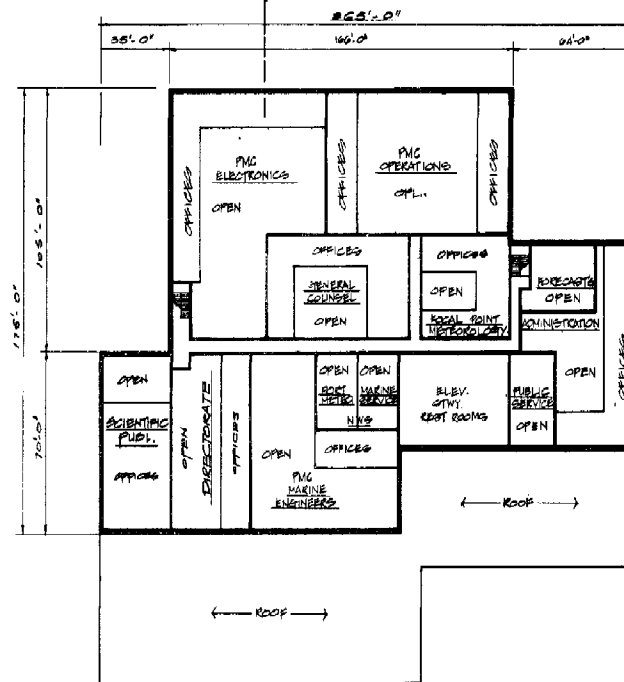
PROJECT NO.
680000
 SCALE
As Shown
 DATE
Dec. 1976

REV: 3-8

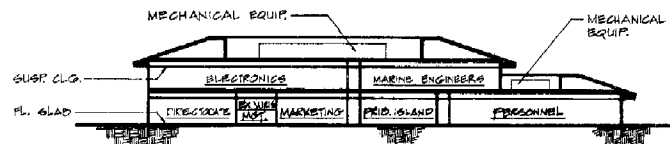
REV: 00



FIRST FLOOR PLAN
SCALE: 1/16" = 1'-0"



SECOND FLOOR PLAN
SCALE: 1/16" = 1'-0"



SECTION
SCALE: 1/16" = 1'-0"

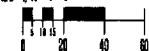
BUILDING TABULATION

NET VOLUME (INCLUDES
INTERNAL CIRCULATION) = 77,070 SF
MECH./WASTE CIRCULATION SPACE = 7,701 SF
AREAS AREA = 84,780 SF

NOTES:

1. FINAL FUNCTIONAL ARRANGEMENT OF SPACES SHALL BE DETERMINED DURING ARCHITECT/ENGINEER CONCEPT STUDIES.
2. THIS DRAWING IS FOR ESTIMATING & BUDGETING PURPOSES.

SCALE: 1/16" = 1'-0"



DESIGNED BY: G. L. Lyle	PROJECT NO. 100
CHECKED BY: S. M. Lyle	DATE: 10/1/76
PROJECT NO. 100	DATE: 10/1/76
THE LYLE ASSOCIATES, INC.	DATE: 10/1/76
1000 WESTPARK DRIVE • MCLEAN, VIRGINIA • 22101	DATE: 10/1/76

LYON ASSOCIATES, INC.
ENGINEERS • ARCHITECTS • PLANNERS
7900 WESTPARK DRIVE • MCLEAN, VIRGINIA • 22101

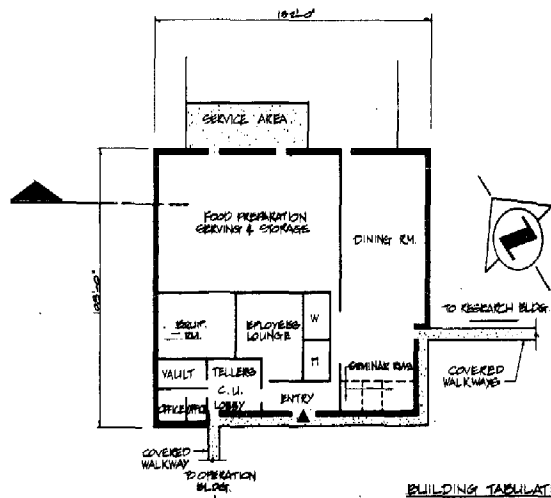
**NATIONAL OCEANIC AND
ATMOSPHERIC ADMINISTRATION**



PROJECT TITLE
**WESTERN REGIONAL CENTER
SAND POINT
SEATTLE, WASHINGTON**

ARCHITECT
**FACILITY STUDY
OPERATIONS BUILDING**

PROJECT NO.	100
DATE	10/1/76
SCALE	As Shown
DATE	10/1/76



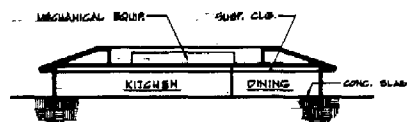
FLOOR PLAN
SCALE: 1/8" = 1'-0"

BUILDING TABULATION

NET USABLE (INCLUDES
INTERNAL CIRCULATION) = 11,620 S.F.
MECH./WALKER CIRCULATION SPACE = 1,162 S.F.
TOTAL AREA = 12,782 S.F.

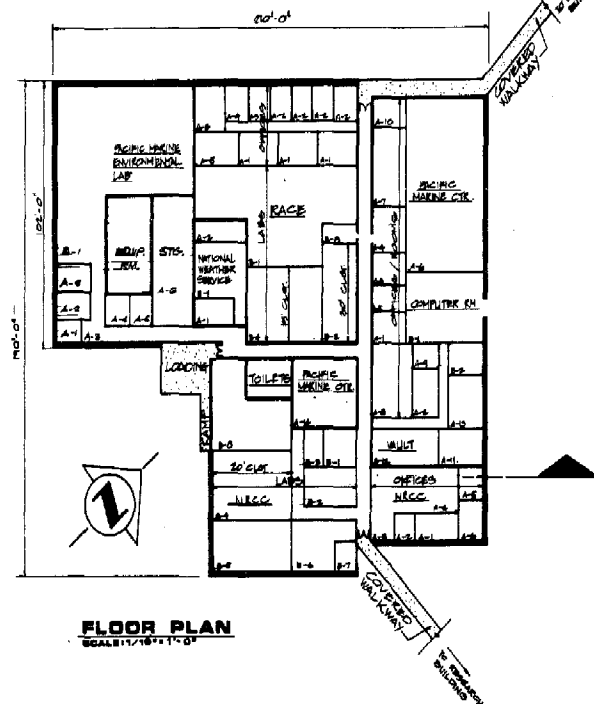
NOTES:

1. FINAL FUNCTIONAL ARRANGEMENT OF SPACES SHALL BE DETERMINED DURING ARCHITECT/ENGINEER CONCEPT STUDIES.
2. THIS DRAWING IS FOR ESTIMATING & BUDGET - NOT FOR CONSTRUCTION.



SECTION
SCALE: 1/8" = 1'-0"

EMPLOYEE SERVICES BUILDING



FLOOR PLAN
SCALE: 1/8" = 1'-0"

BUILDING TABULATION

NET USABLE (INCLUDES
INTERNAL CIRCULATION) = 24,000 S.F.
MECH./WALKER CIRCULATION SPACE = 2,400 S.F.
TOTAL AREA = 26,400 S.F.

NOTES:

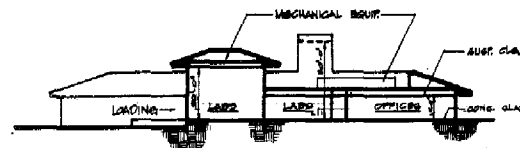
1. FINAL FUNCTIONAL ARRANGEMENT OF SPACES SHALL BE DETERMINED DURING ARCHITECT/ENGINEER CONCEPT STUDIES.
2. THIS DRAWING IS FOR ESTIMATING & BUDGET - NOT FOR CONSTRUCTION.

SCALE: 1/8" = 1'-0"

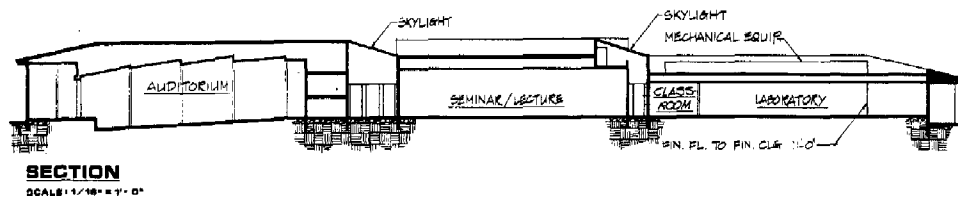
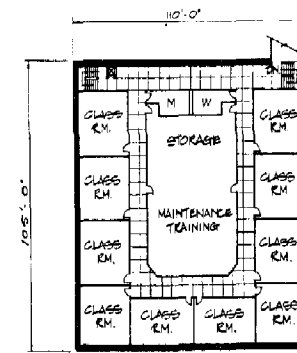
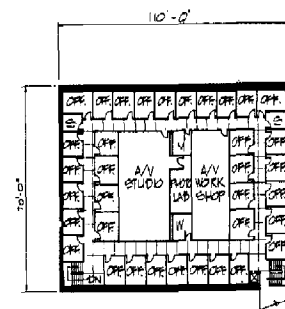
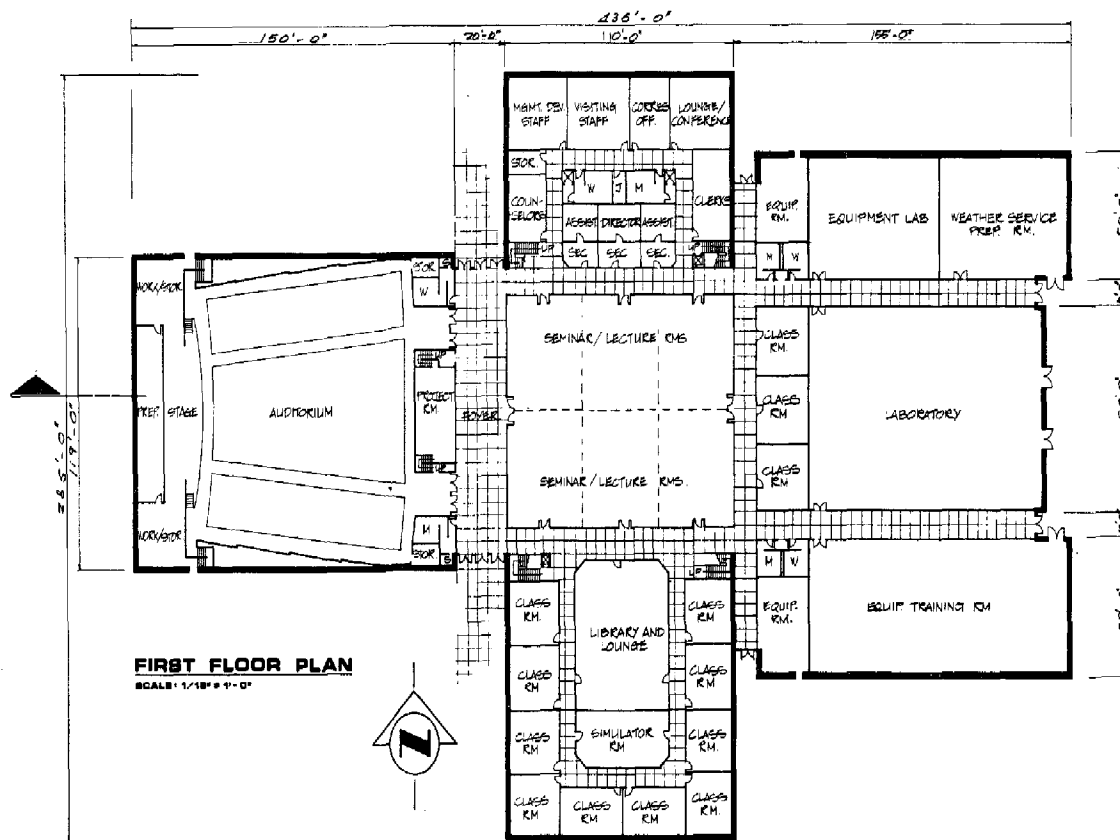


ELECTRONICS BUILDING

SECTION
SCALE: 1/8" = 1'-0"



<p>DESIGNED BY: A. M. Smith DRAWN BY: J. L. Smith CHECKED BY: J. L. Smith DATE: 10/1/70 PROJECT: 100-100-100-100</p>	<p>LYON ASSOCIATES, INC. ENGINEERS - ARCHITECTS - PLANNERS 7900 WESTPARK DRIVE - McLEAN, VIRGINIA - 22101</p>	<p>NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION</p>	<p>PROJECT TITLE WESTERN REGIONAL CENTER SAND POINT SEATTLE, WASHINGTON</p>	<p>SHEET TITLE FACILITY STUDY EMPLOYEE SERVICES BLDG. AND ELECTRONICS BLDG.</p>	<p>PROJECT NO. 100-100-100-100 SHEET NO. 100-100-100-100 DATE 10/1/70</p>
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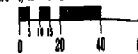
BUILDING TABULATION

NET USABLE (INCLUDES
INTERNAL CIRCULATION) = 70,350 SF
MECH./MAJOR CIRCULATION OFFICE = 8,700 SF
GROSS AREA = 79,050 SF

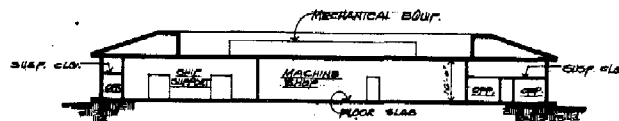
NOTES:

1. FINAL FUNCTIONAL ARRANGEMENT OF SPACES SHALL BE DETERMINED DURING ARCHITECT/ENGINEER CONCEPT STUDIES.
2. THIS DRAWING IS FOR ESTIMATING A BUDGET-ING PURPOSES.

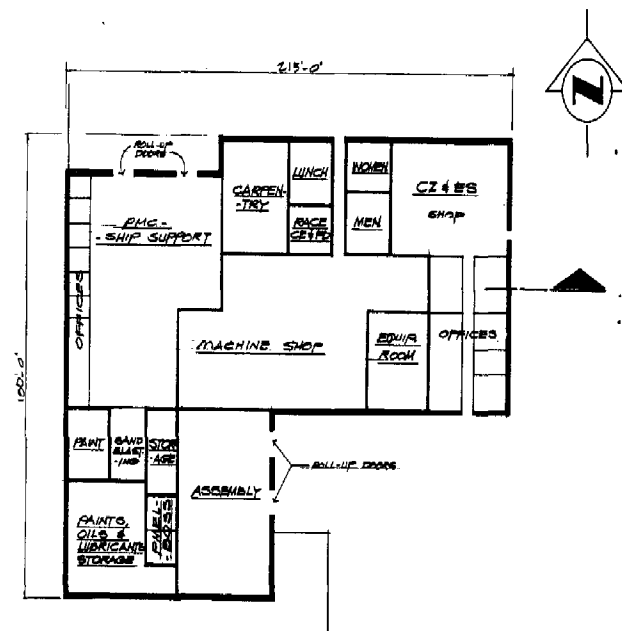
SCALE: 1/16" = 1'-0"



DRAWN BY: S. Lee		LYON ASSOCIATES, INC. ENGINEERS • ARCHITECTS • PLANNERS 7800 WESTPARK DRIVE • McLEAN, VIRGINIA • 22101	NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION 	PROJECT TITLE	SHEET TITLE	PROJECT NO.
CHECKED BY: G. Morgan				WESTERN REGIONAL CENTER	FACILITY STUDY	NO. 8-4
PROJECT NO.: 14-00000				SAND POINT	EDUCATION BUILDING	NO. 10
DATE: 10-1-68				SEATTLE, WASHINGTON		NO. 10
BY: S. Lee						NO. 10



SECTION
SCALE: 1/16" = 1'-0"



FLOOR PLAN
SCALE: 1/16" = 1'-0"

BUILDING TABULATION

NET USABLE (INCLUDES
INTERNAL CIRCULATION) = 26,600 SF.
TECH. / MAJOR CIRCULATION SPACE = 4,079 SF.
STOOD AREA = 30,609 SF.

NOTES:

FINAL FUNCTIONAL ARRANGEMENT OF SPACES
SHALL BE DETERMINED DURING ARCHITECT/
ENGINEER CONCEPT STUDIES.
2. THIS DRAWING IS FOR ESTIMATING BUDGET-
ING PURPOSES.
INCLUDES 1900 SF. PAINTS OILS & LUBRICANTS
STORAGE.

SCALE: 1/16" = 1'-0"



NO.	DATE	REVISION	BY	CHK	APPR.

DESIGNED BY: B. Lee
CHECKED BY: S. Morgan
PROJECT NO.: 1000
DATE: 1/19/78
PROJECT NO.: 1000

LYON ASSOCIATES, INC.
ENGINEERS • ARCHITECTS • PLANNERS
7000 WESTPARK DRIVE • McLEAN, VIRGINIA • 22101

**NATIONAL OCEANIC AND
ATMOSPHERIC ADMINISTRATION**



PROJECT TITLE
**WESTERN REGIONAL CENTER
SAND POINT
SEATTLE, WASHINGTON**

WEST TITLE
**FACILITY STUDY
SHOPS**

PROJECT NO.
1000
DATE
1/19/78

UTILITY PLANT TABULATION

NET USABLE (INCLUDES
INTERNAL CIRCULATION) = 5,000 S.F.
MECH./MAJOR CIRCULATION SPACE = 0 S.F.
GROSS AREA = 5,000 S.F.

NOTES:

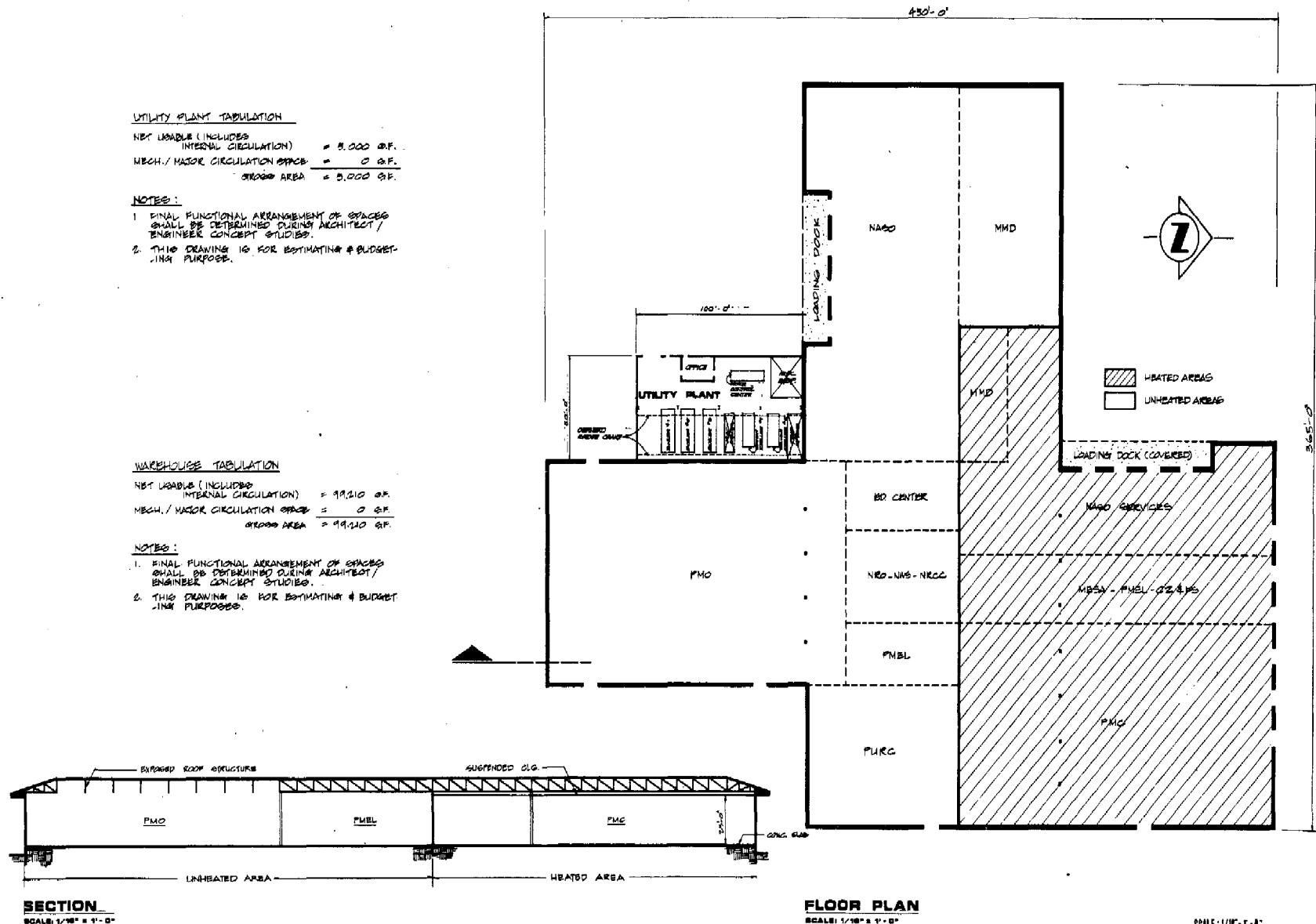
1. FINAL FUNCTIONAL ARRANGEMENT OF SPACES SHALL BE DETERMINED DURING ARCHITECT/ENGINEER CONCEPT STUDIES.
2. THIS DRAWING IS FOR ESTIMATING & BUDGETING PURPOSES.

WAREHOUSE TABULATION

NET USABLE (INCLUDES
INTERNAL CIRCULATION) = 99,210 S.F.
MECH./MAJOR CIRCULATION SPACE = 0 S.F.
GROSS AREA = 99,210 S.F.

NOTES:

1. FINAL FUNCTIONAL ARRANGEMENT OF SPACES SHALL BE DETERMINED DURING ARCHITECT/ENGINEER CONCEPT STUDIES.
2. THIS DRAWING IS FOR ESTIMATING & BUDGETING PURPOSES.



NO.	DATE	REVISION	BY	CHK	APP

DESIGNED BY: D. D. D.
CHECKED BY: S. S. S.
PREP. DATE: 10/1/77
THE ENG APP. S. S. S.
THE ENG APP. S. S. S.

LYON ASSOCIATES, INC.
ENGINEERS - ARCHITECTS - PLANNERS
7000 WESTPARK DRIVE • MCLEAN, VIRGINIA • 22101

**NATIONAL OCEANIC AND
ATMOSPHERIC ADMINISTRATION**



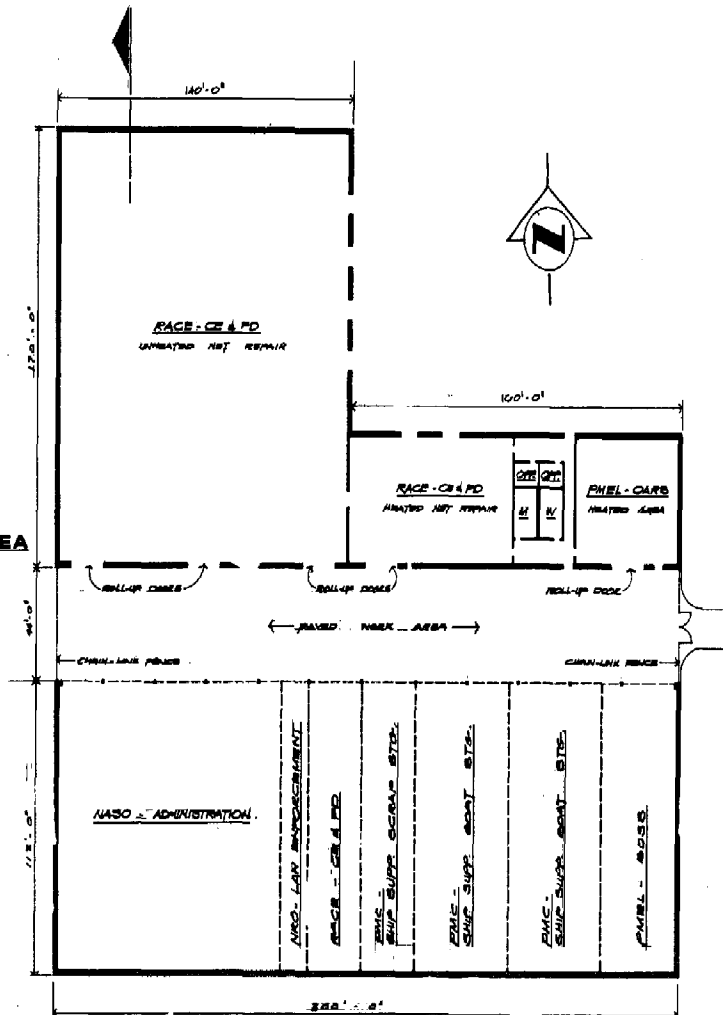
PROJECT TITLE
**WESTERN REGIONAL CENTER
SAND POINT
SEATTLE, WASHINGTON**

DEVELOPMENT
**FACILITY STUDY
WAREHOUSE
AND
UTILITY PLANT**

PROJECT NO.	700-8-6
SCALE	As Shown
DATE	10/1/77

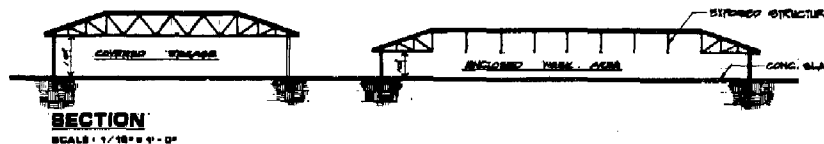
ENCLOSED WORK AREA FLOOR PLAN

SCALE: 1/8" = 1'-0"



COVERED STORAGE AND BOAT STORAGE FLOOR PLAN

SCALE: 1/16" = 1'-0"



BUILDING TABULATION

NET USABLE (INCLUDING INTERNAL CIRCULATION)	= 51,700 G.P.
MECH. / MAJOR CIRCULATION SPACE	= 0 G.P.
TOTAL AREA	= 51,700 G.P.

NOTES:

1. FINAL FUNCTIONAL ARRANGEMENT OF SPACES SHALL BE DETERMINED DURING ARCHITECT / ENGINEER CONCEPT STUDIES.
2. THIS DRAWING IS FOR ESTIMATING & BUDGETING PURPOSES.

BUILDING TABULATION


NET USABLE (INCLUDING INTERNAL CIRCULATION)	= 53,400 G.P.
MECH. / MAJOR CIRCULATION SPACE	= 0 G.P.
TOTAL AREA	= 53,400 G.P.

NOTES:

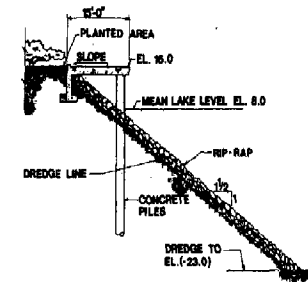
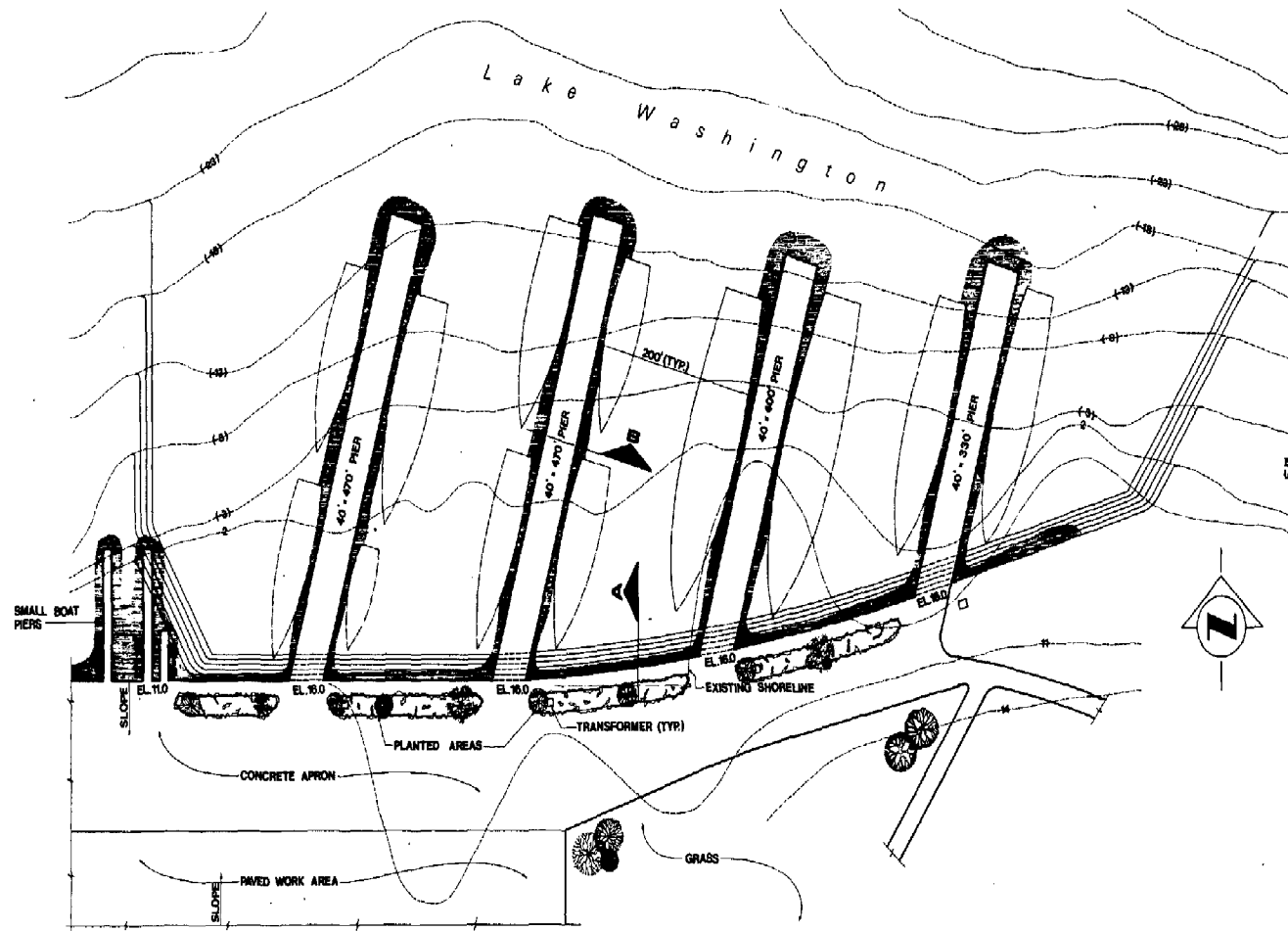
1. FINAL FUNCTIONAL ARRANGEMENT OF SPACES SHALL BE DETERMINED DURING ARCHITECT / ENGINEER CONCEPT STUDIES.
2. THIS DRAWING IS FOR ESTIMATING & BUDGETING PURPOSES.

SCALE: 1/16" = 1'-0"

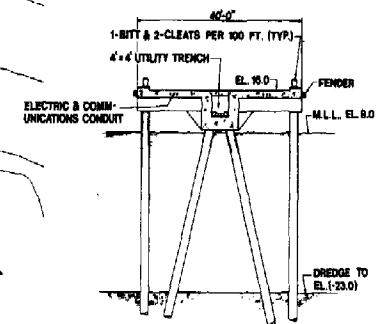


REVISIONS NO. DATE BY 1 11/11/88 BY 2 11/11/88 BY 3 11/11/88 BY 4 11/11/88 BY 5 11/11/88 BY 6 11/11/88 BY 7 11/11/88 BY 8 11/11/88 BY 9 11/11/88 BY 10 11/11/88 BY	DRAWN BY: J. Lee CHECKED BY: J. Hargis DESIGNED BY: J. Hargis IN CHARGE: J. Hargis PROJECT: 7500 WESTPARK DRIVE - McLEAM, VIRGINIA - 22101	LYON ASSOCIATES, INC. ENGINEERS - ARCHITECTS - PLANNERS 7500 WESTPARK DRIVE - McLEAM, VIRGINIA - 22101	NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION	 PROJECT TITLE WESTERN REGIONAL CENTER SAND POINT SEATTLE, WASHINGTON	WEST TITLE FACILITY STUDY ENCLOSED WORK AREA COVERED STORAGE AND BOAT STORAGE PROJECT NO. 7500 DATE 11/11/88	SHEET NO. 101 OF 101
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THIS DRAWING IS FOR ESTIMATING AND BUDGETING PURPOSES.



SECTION A-A



SECTION B-B

SCALE: 1" = 40'



NO.	DATE	REVISION	BY	CL.	APP.

DESIGNED BY: C. G. Smith
 CHECKED BY: W. Smith
 PROJECT NO.: 10-1000
 DATE: 10/1/61
 PREPARED BY: C. G. Smith

LYON ASSOCIATES, INC.
 ENGINEERS - ARCHITECTS - PLANNERS
 1900 WESTPARK DRIVE - McLEAN, VIRGINIA - 22101

**NATIONAL OCEANIC AND
 ATMOSPHERIC ADMINISTRATION**



PROJECT TITLE
**WESTERN REGIONAL CENTER
 SAND POINT
 SEATTLE, WASHINGTON**

DRAWING TITLE
**FACILITY STUDY
 PIER AREA**

PROJECT NO.
 10-1000
 DATE
 10/1/61
 PAGE
 1 OF 1

1. DATE October 1976	2. FISCAL YEAR 78	3. CONSTRUCTION PROJECT DATA (Continued)	3. DEPARTMENT COMMERCE	4. INSTALLATION SAND POINT, SEATTLE, WASHINGTON
5. PROJECT NUMBER A5 B000/FJ 1101		6. PROJECT TITLE WESTERN REGIONAL CENTER		

11. ECONOMIC ANALYSIS

The justification for this project is both programmatic and economic. The primary purpose of this project is to provide adequate facilities which will provide the capacity to satisfy current and future NOAA requirements. The economic analysis presented in this paragraph is confined to a breakdown of investment costs and a discussion, in terms of unit costs, of the economic benefits attributable to this project.

a. Equipment Estimate

The estimated total investment for collateral equipment chargeable to this project is \$5,341,000 (included both in the building estimate and as separate equipment). The estimated total investment of other equipment is \$5,060,000. This investment is treated as collateral equipment not chargeable to the project and is purchased from program operating funds (See paragraph 3.f (1), (2), (3) for detailed breakdown).

b. Construction Estimate

The total budget estimate for construction is \$70,636,000. This includes \$56,525,000 for buildings and piers and \$14,111,000 for support facilities. The cost for buildings and piers includes \$5,081,000 for costs attributable to support facilities. Costs for support facilities are required for base development, basic site work and other measures for support of the primary facilities. These costs are also presented in block 21 of the Construction Project Data Form.

Of the total construction budget cost estimate \$70,636,000, the percentage breakdown for the major project components is shown below.

	\$ (millions)	%
Site Work and Utilities	19.192	27.2
Piers & Dredging	9.431	13.4
Architectural/Structural	27.735	39.2
Mechanical	7.210	10.2
Electrical	4.730	6.7
Equipment	1.356	1.9
Paved Work Areas	0.336	.5
Misc. Structures	0.646	.9
Total Construction	\$70.636	100%

1. DATE October 1976	2. FISCAL YEAR 78	CONSTRUCTION PROJECT DATA (Continued)	3. DEPARTMENT COMMERCE	4. INSTALLATION SAND POINT, SEATTLE, WASHINGTON
5. PROJECT NUMBER A5 B000/FJ 1101		6. PROJECT TITLE WESTERN REGIONAL CENTER		

11. b. (Continued)

As per OMB Circular A-11, Sec. 13.5, of the total construction budget cost estimate, the following amounts for major project components are shown below.

	Budget Estimate (\$1000's)
Water Pollution Control and Treatment Systems	991
OSHA	1,672
Environmental measures	<u>1,543</u>
Total	<u>4,206</u>

No cost is included for fallout protection. The facility is not sited on a flood plain.

The following tables contain construction cost estimates by (a) buildings and piers, (b) costs attributable to support facilities for buildings and piers, and (c) supporting facilities for base development.

c. Economic Benefits

The proposed Western Regional Center will provide NOAA an expanded base for execution of currently assigned programs and allow expansion for future requirements. Cost avoidance associated with component collocation and activity consolidation is \$285,287 annually. Lease vs. construction alternatives have been performed as per OMB Circular A-104. Based on the cost of the facility and current government policy, the construction option is the appropriate comparable alternative to lease. Lease purchase was not considered appropriate, based on reasons stated in Appendix B - Economic Analysis. An analyses of lease vs. construction indicates a payback period within seventeen (17) years for construction when compared to leasing.

1. DATE October 1976	2. FISCAL YEAR 78	3. DEPARTMENT COMMERCE				4. INSTALLATION SAND POINT, SEATTLE, WASHINGTON			
5. PROJECT NUMBER A5 B000/FJ 1101		6. PROJECT TITLE WESTERN REGIONAL CENTER							

11. b. (Continued)

CONSTRUCTION COST ESTIMATES
(\$1,000s)

ACTION ITEMS	COSTS FOR CONSTRUCTION OF BUILDINGS AND PIERS										Total Budget Cost	
	Operations Building	Employee Services Building	Research Building	Electronics Building	Education Building	Ware- Shops	Utility House	Enclosed Work Area	Covered Storage & Boat Storage	Security/ Informa- tion Sta.		
Site Work & Utilities	315	92	329	156	942	95	101	24	106	60	82	2,302
Architectural/ Structural	3,462	639	5,100	1,338	4,564	896	2,480	212	540	408	88	19,727
Mechanical	527	97	1,256	355	672	147	298	1,636	74	33	19	5,114
Electrical	456	151	870	338	689	212	233	212	73	101	20	3,355
Equipment	23	327	299	48	48	139	60	2	5	0	10	961
Paved Work Area	5	5	31	4	--	61	75	26	16	15	--	238
Misc.			425 ⁽¹⁾			17 ⁽²⁾		16 ⁽³⁾				458
Unadjusted Subtotal(FY76)	4,788	1,311	8,310	2,239	6,915	1,567	3,263	2,112	814	617	219	32,155
Budget estimate/ Subtotal	5,856	1,619	12,216	3,229	10,805	2,090	4,523	2,608	1,268	805	335	45,354

Notes:
 (1) Special Lake Water & Salt Water Supply for Aquaculture, Marine Mammal Holding Facilities, & Covered Workspace
 (2) Vehicle Fueling Station
 (3) Explosive Storage

1. DATE October 1976	2. FISCAL YEAR 78	3. DEPARTMENT COMMERCE	4. INSTALLATION SAND POINT, SEATTLE, WASHINGTON
5. PROJECT NUMBER A5 B000/FJ 1101		6. PROJECT TITLE WESTERN REGIONAL CENTER	

11. b. (Continued)

CONSTRUCTION COST ESTIMATES (1000s)				
<u>ACTION ITEMS</u>	<u>Dredging</u>	<u>Main Piers</u>	<u>Small Boat Piers</u>	<u>Total Budget</u>
Dredging	2,500	--	--	2,500
Piers		3,684	127	3,811
Apron, quay wall, rip rap revetment		1,222	95	1,317
Pier utilities: sanitary sewer		26	--	26
Bilge-ballast water handling		138	7	145
Water		65	--	65
Steam		569	--	569
Electricial		355	11	366
Communications		9	--	9
Lighting		25	2	27
Fuel handling system		38	--	38
Parking lot: paving		131	--	131
storm sewers, treated lighting		13	--	13
		17	--	17
Unadjusted Total (FY76)	2,500	6,292	242	9,034
Budget Estimate Subtotal	2,775	8,085	311	11,171
TOTAL CONSTRUCTION COSTS				56,525

1. DATE October 1976	2. FISCAL YEAR 78	3. DEPARTMENT COMMERCE		4. INSTALLATION SAND POINT, SEATTLE, WASHINGTON			
5. PROJECT NUMBER A5 B000/FJ 1101		6. PROJECT TITLE WESTERN REGIONAL CENTER					

11. b. (Continued)

CONSTRUCTION COST FOR SUPPORTING FACILITIES
(1,000s)

ACTION ITEMS	COSTS FOR SUPPORT FACILITIES							Total Budget Total
	General Site Work	Main Utilities Systems	Shore- line Reserve	Lagoon	Main Gate Access	North Gate Access	Hangars 1, 32 & 33 Demolition	
Demoliton - buildings	77	--	--	--	--	23	549	649
- paving	1,672	--	--	--	119	88	126	2,005
Grading, including seeding	3,783	--	619	220	2	2		4,626
Roads	232				168	162		562
Sidewalks	15		7		5	3		30
Planting (trees, bushes & mulching)	639		107		5	4		755
Fencing	55				24	19		98
Storm sewers - treated		209						209
- untreated		183						183
Sanitary sewers		123						123
Main sanitary pumping station		117						117
Water distribution		389		25	97	48		414
Steam distribution		381						381
Chilled water distribution		203						203
Electrical distribution		174						174
Main substation		77						77
Communications		102						102
Exterior lighting		38			19	9		66
Control/monitor system		794						794
Unadjusted total(FY76)	6,473	2,790	733	245	439	358	675	11,713
Budget total	7,832	3,315	887	296	531	433	817	14,111

1. DATE October 1976	2. FISCAL YEAR 78	3. DEPARTMENT COMMERCE		4. INSTALLATION SAND POINT, SEATTLE, WASHINGTON								
5. PROJECT NUMBER A5 B000/FJ 1101		6. PROJECT TITLE WESTERN REGIONAL CENTER										
11. b. (Continued)												
CONSTRUCTION COST ESTIMATES (\$1,000s)												
ACTION ITEM												
COST ATTRIBUTABLE TO SUPPORT FACILITIES FOR BUILDINGS												
	Operations Building	Employee Services Building	Research Building	Electronics Building	Education Building	Ware- Shops House	Utility Plant	Enclosed Work Area	Covered Storage & Boat Storage	Security/ Informa- tion Sta.	Total Budget Cost	
Grading	3	1	45	24	50	23	44	1	30	25	9	255
Roads	65	4	16	8	10	-	3	4	2	3	1	116
Parking Lots	108	-	61	35	194	-	-	-	-	-	9	407
Sidewalk	6	1	2	1	8	1	1	1	2	2	1	26
Covered Walk	-	10	42	13	-	-	-	-	-	-	-	65
Planting	69	16	74	34	122	15	35	5	9	16	15	410
Fencing	-	-	-	-	-	-	-	-	1	4	-	5
Storm Sewers, Treated	9	2	13	-	95	2	-	-	2	-	2	125
Storm Sewers, Untreated	2	2	2	6	3	1	1	1	1	1	1	21
Sanitary Sewers	2	5	9	3	16	5	2	1	3	-	19	65
Water Distribution	1	3	1	1	16	2	2	3	2	2	8	41
Steam Distribution	9	32	17	12	205	7	-	-	50	-	-	332
Chilled Water Dist.	9	11	8	8	111	24	-	-	-	-	-	171
Electrical Dist.	4	2	23	3	34	3	-	4	-	3	9	85
Communications	3	1	3	2	32	2	-	2	2	2	6	55
Exterior Lighting	25	2	13	6	46	10	13	2	2	2	2	123
Unadjusted Subtotal	315	92	329	156	942	95	101	24	106	60	82	2302
Budget Estimate Subtotal	385	114	484	225	1468	127	140	30	165	78	125	3341

1. DATE October 1976	2. FISCAL YEAR 78	3. DEPARTMENT COMMERCE	4. INSTALLATION SAND POINT, SEATTLE, WASHINGTON
5. PROJECT NUMBER A5 B000/FJ 1101		6. PROJECT TITLE WESTERN REGIONAL CENTER	
<p>12. <u>Environmental Impact</u></p> <p>The environmental evaluation of this project has been made and is summarized below.</p> <p>Adverse impacts are largely of a short-term nature and follow from site preparation, dredging and construction activities. Most of these impacts can be mitigated significantly. Most longer term impacts are substantively beneficial. Along with Sand Point, NOAA considered sites at Manchester, Lake Union, the Duwamish River, Piers 90-91 and at Fort Worden. Additional consideration was given to split siting of NOAA facilities. Sand Point proved to be attractive from the standpoint of adverse impact avoidance as well as of the highest utility for NOAA and the best site in terms of utility cost.</p> <p>a. <u>Short-Term Impacts</u></p> <p>(1) <u>Natural Conditions</u></p> <p>(a) <u>Water quality.</u> Dredging and pier construction will create temporary, localized water turbidity.</p> <p>(b) <u>Soil.</u> Dredged material will be deposited, dried and utilized on the site a part of site preparation. Most of the pavement will be either taken up and re-used as a part of landscaping, or covered over with soil. A two-acre lagoon is contemplated on the eastern portion of the site, adding about 1,100 feet of shoreline; 1,300 feet of shoreline would be involved in the pier complex.</p> <p>(c) <u>Vegetation and wildlife.</u> Most of the present vegetation inward from the shoreline would be covered or disturbed during construction. Land birds and ground animals would be largely displaced during construction. Waterfowl are not likely to be significantly affected.</p> <p>(d) <u>Aquatic biota.</u> During dredging, revetment construction, pier construction and lagoon excavation, severe water turbidity is likely which will blight the immediate area biologically for two to three months. The dredging would remove or bury existing benthic organisms in and immediately adjacent to the dredge area. Mobile aquatic life would probably avoid the area until the water cleared.</p> <p>(e) <u>Sonic quality.</u> Construction noise will be above ambient levels but will not exceed 75-80dB.</p> <p>(f) <u>Public utility resources.</u> Some solid waste material which cannot be disposed of on-site will be disposed of at existing commercial disposal sites.</p> <p>(2) <u>Social Conditions.</u></p> <p>No significant change.</p>			

1. DATE October 1976	2. FISCAL YEAR 78	CONSTRUCTION PROJECT DATA (Continued)	3. DEPARTMENT COMMERCE	4. INSTALLATION SAND POINT, SEATTLE, WASHINGTON
5. PROJECT NUMBER A5 B000/FJ 1101		6. PROJECT TITLE WESTERN REGIONAL CENTER		

12. a. (Continued)

(3) Economic Conditions

Approximately \$65 million of new funds will be invested in the Seattle area over the period of construction.

(4) Visual Conditions

Construction activities are generally considered to be visually unappealing.

(5) Land Use Conditions

Almost total transformation of the NOAA site is contemplated. In adjacent areas no changes are likely as a result of this project.

(6) Transportation Conditions

Unusual traffic during construction may require short-term special traffic routing.

(7) Historical and Archeological Resources

No such resources are known to exist on the site.

b. Long-Term Impacts

(1) Natural Conditions

(a) Air quality. No existing standards would be violated.

(b) Water quality. New facility effluent and surface water controls will be developed. A full range of vessel effluent controls are planned. No adverse effects on water quality are likely under these conditions.

(c) Soil. Site development and landscaping will sharply increase the natural productivity of the site. Extensive new vegetation will be introduced. About 567,000 square feet of the lake bottom will be affected in the removal of about 260,000 cubic yards of bottom material. A riprap revetment will be installed along 1,300 feet of shoreline in the pier area.

1. DATE October 1976	2. FISCAL YEAR 78	CONSTRUCTION PROJECT DATA (Continued)	3. DEPARTMENT COMMERCE	4. INSTALLATION SAND POINT, SEATTLE, WASHINGTON
5. PROJECT NUMBER A5 B000/FJ 1101		6. PROJECT TITLE WESTERN REGIONAL CENTER		

12. b. (Continued)

(1) Natural Conditions Continued

(d) Vegetation and wildlife. A net increase of about 40 acres of vegetation will be achieved in the construction process. Local varieties of trees, shrubs and grasses will be introduced. A substantial portion of the present on-land wildlife of the site will be displaced or eliminated. Waterfowl are not likely to be affected.

(e) Aquatic biota. Recently completed aquatic biota studies indicate a probable net decrease in the biomass of the pier area due to the loss of the shallow area in creating vessel moorage. The benthic community can be expected to regenerate slowly and would not be significantly affected by NOAA pier area operations. Some fishes will probably increase in population in the pier area. The biological productivity of the lake will be relatively unaffected by these changes.

(f) Sonic quality. No significant long-term adverse impact is likely. Maintenance of present ambient noise ranges might be attributable to the NOAA Center in operation.

(2) Social Conditions

Significant addition to existing recreational and educational resources will be achieved. No adverse impacts are likely.

(3) Economic Conditions

In addition to productivity and efficiency gains for NOAA, there will be additional stimulus to marine and oceanographic research in the region at institutions such as Battelle Northwest and the University of Washington. An additional 500 new jobs in the next 25 years would be brought to the Seattle area. No adverse effects are likely.

(4) Visual Conditions

The sharply increased visual appeal of the site will enhance considerably the attractiveness of the surrounding neighborhoods.

1. DATE October 1976	2. FISCAL YEAR 78	CONSTRUCTION PROJECT DATA (Continued)	3. DEPARTMENT COMMERCE	4. INSTALLATION SAND POINT, SEATTLE, WASHINGTON
5. PROJECT NUMBER A5 B000/FJ 1101		6. PROJECT TITLE WESTERN REGIONAL CENTER		

12. b. (Continued)

(5) Land Use Conditions

There will be net reduction of about 40 acres of existing pavement. Many of the topographic features of the site before the construction of the aviation facility will be reestablished. Public access to the site will be reestablished. The pier complex could be considered adverse from an environmental standpoint, however, the proposed lagoon provides substantial compensation.

(6) Transportation Conditions

To insure that project-generated vehicular traffic will have no adverse effect on the functioning of the street system, the project entrances will be adequately designed and controlled by traffic signals. Passage of NOAA vessels through the Lake Washington Ship Canal will not adversely affect vehicular traffic crossing the draw bridges to a significant degree, so long as the transit of vessels at peak hours is avoided in accordance with NOAA policies.

(7) Historical and Archeological Resources

No such resources are known to exist on the site.

APPENDIX A- BUDGET/PERSONNEL/SPACE REQUIREMENTS

SAND POINT SUMMARY	(2) Justification	(3) Personnel/Budget; FY76-FY81						% Change Personnel Only	(4) Space by type; by FY						Change
		76	77	78	79	80	81		76	77	78	79	80	81	
NMFS NRO	1,2,3	67	78	85	85	98	98	46	7421	10271	10271	13857	13857	15472	108
		5791	6286	6740	7081	7652	8013		0	650	650	900	900	0	0
									7500	7500	7500	7500	7500	900	-88
NWFC	1,2	90	90	137	139	139	150	67	19715	20314	24964	25264	25564	29858	51
		2901.8	3516.9	6582.7	6834.9	7504.6	7836.2		2200	2730	3900	4400	4900	4664	112
									9234	9255	9550	9550	9550	41519	350
NWS	1,2,3	38	38	38	38	49	50	32	54930	54930	41150	41650	42150	17550	-68
		945.3	1009.5	1065.3	1118.6	1405.9	1476.2		5500	5500	5500	5500	7495	9520	73
									900	900	900	900	900	700	-22
PMC (NRCC INCLUDED)	1,2,3	736	759	776	786	804	836	14	1205	1205	1205	1205	1205	360	-70
		17612.3	18802.0	19928.0	21003.0	22185.8	12138.9		15359	15759	15759	15759	15759	25872	35
									4285	4350	4350	4350	4350	4424	118
PMEL	2,3	107	110	130	149	149	180	68	6696	8093	8093	8093	8093	14921	123
		4000.0	4400.0	5200.0	6000.0	6300.0	6600.0		35200	34450	34450	34450	34450	41400	18
									25100	26850	26850	27154	27154	33837	35
PURC	2,3	32	32	32	32	32	34	6	7900	8700	8700	5791	5791	13547	71
		793.9	833.6	875.3	919.0	965.0	1073.2		7000	7000	7000	7914	7914	9796	40
									5000	5000	5000	2603	2603	3500	-30
SCIENTIFIC PUBLICATIONS	3	11	12	12	13	14	15	36	3200	3200	3200	3200	3200	3651	14
		470.3	470.3	517.3	580.7	650.4	727.1		11650	11650	11650	11650	11650	19451	67
									2000	2000	2000	2000	2000	0	-
NOAA TRAINING CENTER	1,2,3	36	44	49	54	59	59	64	7470	7470	7470	7470	7470	6000	-20
		812.0	871.0	973.0	1750.0	1177.0	1279.0		3000	3000	3000	2655	2655	2900	-3
									0	0	0	0	0	0	-
									0	0	0	0	0	0	-
									745	745	745	0	0	0	-
									6300	6300	6300	6300	6300	10150	61
									23250	23250	23250	23250	23250	68700	195
									4350	4350	4350	4350	4350	12000	176
									1100	1100	1100	1100	1100	3000	173

(1) N = New Activity

E = Existing Activity; little expansion expected

X = Expansion underway or expected

(2) Justification Codes:

1. Space unavailable
2. Inadequate or inappropriate present space
3. Management & control relationship enhanced by collocation at Sand Point

(3) Personnel counts/estimates on top; budget below, in \$000. Personnel counts include all full and part time categories

(4) Space
O = Office Space
L = Lab Space
S = Shop
W = Warehouse

APPENDIX A - (BUDGET/PERSONNEL/SPACE REQUIREMENTS)

SAND POINT	(2) Justifi- cation	(3) Personnel/Budget; FY76-FY81						% Change Personnel Only	(4) Space by type; by FY						% Change	
		76	77	78	79	80	81		O	76	77	78	79	80		81
NASO	1,2,3	83	89	93	108	112	126	52	O	10284	10430	10430	18279	18279	28967	182
		1396.5	1659.0	1780.0	2128.0	2367.0	2546.0		L							
									S							
									W	2963	2963	2963	25538	25538	26500	794
VISITOR/MGMT. INFO.	3	0	0	0	2	2	2	-	O	0	0	0	0	450	2400	-
		0	0	0	30	70	70		L							
									S							
									W							
EDS LIBRARY	1 & 3	0	0	0	0	0	3	-	O	0	0	0	0	0	8960	-
		0	0	0	0	0	104.3		L							
									S							
									W							
EMPLOYEE SERVICES	1	0	0	0	0	0	12	-	O	0	0	0	0	0	11620	-
		0	0	0	0	0	-		L							
									S							
									W							
									O							
									L							
									S							
									W							
TOTALS		1200	1252	1352	1404	1456	1565	30	O	95879	101624	106274	117968	120263	183207	91
		34723.1		43661.6		50207.7			L	49285	50680	51850	49441	49920	110786	125
			37848.3		47415.2		52759.6		S	30180	32248	32543	33707	33596	78936	162
									W	116113	115363	101583	121516	122016	99210	-15
									D	291457					472139	62
									L							
									S							
									W							

APPENDIX A - (BUDGET/PERSONNEL/SPACE REQUIREMENTS)

National Marine Fisheries Service, NW Regional Office	(2) Justification	(3) Personnel/Budget; FY76-FY81						% Change Personnel Only	(4) Space by type; by FY						% Change	
		76	77	78	79	80	81			76	77	78	79	80		81
(X) REGIONAL OFFICE MANAGEMENT 900040	2	13	14	14	14	15	23	77	Q	2246	2396	2396	2584	2584	4486	100
		274	300	316	331	358	376		L							-
									S						900	-
									W							-
(X) FISHERY ENFORCEMENT AND SURVEILLANCE 8F5	2 & 1	7	11	13	13	13	16	129	O	611	2011	2011	2011	2011	2615	328
		218	318	368	386	400	400		L							-
									S	0	650	650	900	900	0	0
									W							-
(E) MARINE MAMMAL CONSERVATION 804	3	2	2	2	2	2	0	-	O	200	200	200	200	200	0	-
		80	84	88	93	97	102		L							-
									S							-
									W							-
(E) ENDANGERED SPECIES CONSERVATION 8C5	3	1	1	1	1	1	0	-	O	100	100	100	100	100	0	-
		25	26	27	29	30	32		L							-
									S							-
									W							-
(X) INCREASING USE OF RESOURCES ECONOMICS AND MARKETING 8F7	2 & 1	20	22	22	22	24	33	65	O	1288	1588	1588	3300	3300	4210	227
		209	234	244	255	300	305		L							-
									S							-
									W							-
(X) STATE-FEDERAL FISHERIES MANAGEMENT 8F3 Merged into Fish.Mgt. Div. (ES)	2 & 1	3	7	10	10	10	0	-	O	320	1320	1320	1080	1080	0	-
		200	300	375	390	410	430		L							-
									S							-
									W							-
(E) FISHERIES GRANTS TO STATES 8F4	3	0	Included in 8F3					-	O							-
		413	434	456	479	503	528		L							-
									S							-
									W							-
(E) ANADROMOUS FISHERIES GRANTS 8E3	3	0	Included in 8F3					-	O							-
		765	804	844	886	930	977		L							-
									S							-
									W							-

APPENDIX A - (BUDGET/PERSONNEL/SPACE REQUIREMENTS)

National Marine Fisheries Service, NW Regional Office	(2)	(3)						% Change Personnel Only	(4) Space by type; by FY						% Change		
	Justification	Personnel/Budget; FY76-FY81							O	76	77	78	79	80		81	
E	3	76	77	78	79	80	81	∞	O	396	396	396	560	560	0	-∞	
ECONOMICS & COMMERCIAL FISHERY STATISTICS 8F6		4	4	4	4	4	0		L								-
		103	109	114	120	126	132		S								-
E	2 & 1	1	1	2	2	3	0	∞	O	100	100	100	420	420	0	-∞	
MARINE RECREATIONAL FISHERIES 8F9		16	17	35	38	55	58		L								-
									S								-
E	2 & 1	4	4	5	5	6	6	50	O	514	514	514	961	961	935	82	
FISHERIES LOAN FUND ADMINISTRATION 873		20	20	20	20	20	20		L								-
									S								-
E	3	0	Included in		873			-	O								-
FEDERAL SHIP FINANCING 876		34	36	55	55	60	60		L								-
									S								-
E	3	0	Included in		873			-	O								-
CAPITAL CONSTRUCTION FUND 872		34	36	36	36	55	58		L								-
									S								-
E	3	10	10	10	10	11	11	10	O	1360	1360	1360	1435	1435	1809	33	
PRIBILOF ISLAND PROGRAM 8C6		3340	3507	3700	3900	4100	4300		L								-
									S								-∞
N	2 & 1	0	0	0	0	6	6	∞	O	7500	7500	7500	7500	7500	0	-	
ENVIRONMENTAL IMPACT ANALYSIS 8C3		0	0	0	0	130	135		L	0	0	0	626	626	762	-∞	
									S								-
E	2 & 1	2	2	2	2	3	3	50	O	286	286	286	580	580	655	129	
AQUACULTURE		60	61	62	63	78	80		L								-
									S								-
									W							-	

APPENDIX A- (BUDGET/PERSONNEL/SPACE REQUIREMENTS)

National Marine Fisheries Service NW Regional Office	(2) Justi- fication	(3) Personnel/Budget; FY76-FY81						% Change Personnel Only	(4) Space by type; by FY							% Change
		76	77	78	79	80	81			76	77	78	79	80	81	
TOTAL		67	78	85	88	98	98	46	O	7421	10271	10271	13857	13857	15472	108
									L							-
		5791	6286	6740	7081	7652	8013		S		650	650	900	900	0	-
									W	7500	7500	7500	7500	7500	900	-88
									O	14921					16372	10
									L							
									S							
									W							
									O							
									L							
									S							
									W							
									O							
									L							
									S							
									W							
									O							
									L							
									S							
									W							
									O							
									L							
									S							
									W							

APPENDIX A - (BUDGET/PERSONNEL/SPACE REQUIREMENTS)

NORTHWEST FISHERIES CENTER	(2) Justifi- cation	(3) Personnel/Budget; FY76-FY81						% Change Personnel Only	(4) Space by type; by FY							% Change
		76	77	78	79	80	81		O	76	77	78	79	80	81	
COASTAL ZONE & ESTUARINE STUDIES	E 2							55	O	1130	1130	1130	1130	1130	2390	112
		11	11	11	13	13	17		L	0	0	0	0	0	0	-
									S	4250	4250	4250	4250	4250	5208	23
		201.9	195.5	206.3	262.1	275.7	290.8		W	8850	8850	8850	8850	8850	7550	-15
RESOURCE ASSESSMENT & CONSERVATION ENG. (RACE)	X 2 & 1	45	45	91	91	91	98	117	O	9661	10260	14910	15210	15510	19510	102
									L	1300	1830	3000	3500	4000	1060	-18
		1749.0	1872.0	3927.0	4123.4	4329.5	4746.0		S	4784	4805	5100	5100	5100	35795	648
									W	37280	37280	23500	24000	24500	0	-∞
MARINE MAMMAL LABORATORY	E 2	34	34	35	35	35	35	3	O	8924	8924	8924	8924	8924	7958	-11
									L	900	900	900	900	900	3604	300
									S	200	200	200	200	200	516	158
		950.9	1449.4	2449.4	2449.4	2899.4	2799.4		W	8800	8800	8800	8800	8800	10000	14
TOTAL		90	90	137	139	139	150	67	O	19715	20314	24964	25264	25564	29858	51
									L	2200	2730	3900	4400	4900	4664	112
		2901.8	3516.9	6582.7	6834.9	7504.6	7836.2		S	9234	9255	9550	9550	9550	41519	350
									W	54930	54930	41150	41650	42150	17550	-68
									O	86079					93591	9
									L							
									S							
									W							
									O							
									L							
									S							
									W							
									O							
									L							
									S							
									W							

APPENDIX A - (BUDGET/PERSONNEL/SPACE REQUIREMENTS)

National Weather Service	(2) Justification	(3) Personnel/Budget; FY76-FY81						% Change Personnel Only	(4) Space by type; by FY						% Change	
		76	77	78	79	80	81			76	77	78	79	80		81
Basic Observations (E)	3	4	4	4	4	6	6	50	O	600	600	600	600	900	1142	90
		95.1	101.0	106.8	112.1	156.8	164.6		L							
									S	400	400	400	400	400	400	0
									W	100	100	100	100	100	0	-
Basic Communications (E)	3	4	4	4	4	4	4	0	O	1100	1100	1100	1100	1100	1428	30
		67.6	71.7	75.6	79.4	83.4	87.6		L							-
									S							-
									W							-
Maintenance & Repair (E)	3	5	5	5	5	6	6	20	O	500	500	500	500	605	762	52
		117.5	126.6	133.6	140.3	159.8	167.8		L							-
									S	300	300	300	300	300	300	0
									W	1105	1105	1105	1105	1000	360	-67
River & Flood Forecast (E)	3	1	1	1	1	1	1	0	O	170	170	170	170	170	190	12
		24.6	25.9	27.3	28.7	30.1	31.6		L							-
									S							-
									W							-
Public Weather (E)	3	12	12	12	12	13	14	17	O	1360	1360	1360	1360	1600	2000	47
		313.1	334.3	352.7	370.3	390.1	409.6		L							-
									S	200	200	200	200	200	0	-
									W							-
Marine Prediction (X)	1 & 2	4	4	4	4	10	10	150	O	600	600	600	600	1750	2285	281
		100.0	107.1	113.0	118.7	290.8	305.3		L							-
									S							-
									W							-
Aviation Weather (E)	3	7	7	7	7	8	8	14	O	1000	1000	1000	1000	1200	1523	52
		194.8	207.4	218.8	229.7	253.5	266.2		L							-
									S							-
									W							-
Air Pollution & Fire Weather (E)	3	1	1	1	1	1	1	0	O	170	170	170	170	170	190	12
		32.6	35.5	37.5	39.4	41.4	43.5		L							-
									S							-
									W							-

APPENDIX A - (BUDGET/PERSONNEL/SPACE REQUIREMENTS)

National Weather Service	(2) Justi- fication	(3) Personnel/Budget; FY76-FY81						% Change Personnel Only	(4) Space by type; by FY						% Change		
		76	77	78	79	80	81			76	77	78	79	80		81	
TOTAL		38	38	38	38	49	50	32	O	5500	5500	5500	5500	7495	9520	73	
									L								
									S	900	900	900	900	900	700	-22	
		945.3	1009.5	1065.3	1118.6	1405.9	1476.2	W	1205	1205	1205	1205	1100	360	-70		
								O	7605					10580	+39		
								L									
								S									
								W									
								O									
								L									
								S									
								W									
								O									
								L									
								S									
								W									
								O									
								L									
								S									
								W									
								O									
								L									
								S									
								W									

APPENDIX A - (BUDGET/PERSONNEL/SPACE REQUIREMENTS)

Pacific Marine Center	(2) Justi- fication	(3) Personnel/Budget; FY76-FY81						% Change Personnel Only	(4) Space by type; by FY						% Change	
		76	77	78	79	80	81			76	77	78	79	80		81
X Coastal Mapping	1 & 3	11	16	18	21	15	12	9	O	765	765	765	765	765	1203	57
		345.2	399.1	453.8	525.7	374.0	323.1		L	-	-	-	-	-	-	-
		0	750	750	750	750	1049		-	-	-	-	-	-		
X Hydrographic Surveys	1 & 3	24	30	31	31	31	31	29	W	-	-	-	-	-	-	-
		434.7	563.6	609.4	638.6	670.1	702.3		O	4839	4839	4839	4839	4839	8900	84
		-	-	-	-	-	-		L	-	-	-	-	-	-	-
X Ship Base Operations	1 & 3	62	62	62	62	62	62	0	S	-	-	-	-	-	-	-
		4360.2	4536.0	4734.8	4934.2	5142.0	5358.7		W	-	-	-	-	-	-	-
		6845	7245	7245	7245	7245	10823		58	L	2435	2500	2500	2500	2500	4424
E NRCC Calibration Center	2 & 3	6	6	6	6	6	11	83	S	3357	4000	4000	4000	4000	8497	153
		150.0	157.5	165.4	173.7	182.4	191.5		W	-	-	-	-	-	-	-
		850	850	850	850	850	1820		114	O	1850	1850	1850	1850	1850	0
X Ship Operations	1 & 3	614	625	638	645	669	699	14	S	2700	2700	2700	2700	2700	4431	64
		12633.7	14151.4	15211.5	15929.9	-	-		W	-0-	-0-	-0-	-0-	-0-	400	-
		11918.0	13410.4	15211.5	15929.9	-	-		O	-	-	-	-	-	-	-
X General Support	1 & 3	19	20	21	21	21	21	11	L	-	-	-	-	-	-	-
		404.2	512.1	554.2	579.4	605.8	633.4		S	-	-	-	-	-	-	-
		-	-	-	-	-	-		W	-	-	-	-	-	-	-
Total Exclusion of Calibration Center		730	753	770	780	798	825	13	O	14509	14909	14909	14909	14909	24052	66
		18644.5	20829.3	22003.4	22947.4	-	-		L	2435	2500	2500	2500	2500	4424	82
		17462.3	19762.6	22003.4	22947.4	-	-		S	3996	5393	5393	5393	5393	10490	163
Total		736	759	776	786	804	836	14	W	35200	34450	34450	34450	34450	41000	16
		18802.0	21003.0	22185.8	23138.9	-	-		O	15359	15759	15759	15759	15759	25872	68
		17612.3	19928.0	22185.8	23138.9	-	-		L	4285	4350	4350	4350	4350	4424	3
									S	6696	8093	8093	8093	8093	14921	123
									W	35200	34450	34450	34450	34450	41400	18
										61540					86617	141

APPENDIX A- (BUDGET/PERSONNEL/SPACE REQUIREMENTS)

Pacific Marine Environmental Laboratory	(2) Justi- fication	(3) Personnel/Budget; FY76-FY81						% Change Personnel Only	(4) Space by type; by FY						% Change	
		76	77	78	79	80	81			76	77	78	79	80		81
Regional Projects and Ocean Dumping (X) Research 712 MESA	2, 3	10	10	11	15	15	15	50	O	2500	2500	2500	2627	2627	2587	3
									L	400	1000	1000	372	372	0	00
									S	500	500	500	372	372	0	00
									W	1000	1000	1000	149	149	400	-60
Effects of Marine (X) Environmental Alterations 713	2,3	69	69	83	89	89	99	43	O	14850	14850	14850	14865	14865	14851	0
									L	7000	5700	5700	4236	4236	7426	6
									S	500	500	500	372	372	0	00
									W	3000	3000	3000	2230	2230	3100	-3
Structures & Motion of Oceans Research (X) 333 OARS	2, 3	10	10	10	15	15	24	140	O	2500	2500	2500	2973	2973	4564	83
									L	0	1000	1000	743	743	2226	-
									S	100	100	100	372	372	2500	2400
									W	500	500	500	149	149	0	-
Application of (X) Satellite Data B32	2, 3	3	5	8	10	10	10	233	O	3500	4000	4000	4459	4459	5230	49
									L	-	-	-	-	-	-	-
									S	5500	5500	5500	5940	5940	7296	33
									W	-	-	-	-	-	-	-
Office Management (X)	2, 3	15	16	18	20	20	32	113	O	1750	3000	3000	2230	2230	6605	277
									L	500	1000	1000	440	440	3895	679
									S	400	400	400	858	858	0	-
									W	500	500	500	75	75	0	-
Totals		107	110	130	149	149	180	68	O	25100	26850	26850	27154	27154	33837	35
									L	7900	8700	8700	5791	5791	13547	71
									S	7000	7000	7000	7914	7914	9796	40
									W	5000	5000	5000	2603	2603	3500	-30
									O	45000					60680	35
									L							
									S							
									W							
									O							
									L							
									S							
									W							

APPENDIX A - (BUDGET/PERSONNEL/SPACE REQUIREMENTS)

PACIFIC UTILIZATION RESEARCH CENTER	(2) Justifi- cation	(3) Personnel/Budget; FY76-FY81						% Change Personnel Only	(4) Space by type; by FY						% Change	
		76	77	78	79	80	81		O	76	77	78	79	80		81
RESOURCE DEVELOPMENT AND IMPROVEMENT (E)	2	12	12	12	12	12	12	0	O	600	600	600	600	600	728	21
		332.0	348.6	366.0	384.3	403.5	423.7		L	6000	6000	6000	6000	6000	9287	55
									S	1500	1500	1500	1500	1500	0	∞
PRODUCT QUALITY AND SAFETY (E - SOME EXPANSION	2	10	10	10	10	10	12	20	W	3000	3000	3000	3000	3000	2940	-2
									O	600	600	600	600	600	728	21
		212.4	223.0	234.2	245.9	258.2	331.1		L	3020	3020	3020	3020	3020	5824	93
NUTRITION AND AQUACULTURE (E)	2	3	3	3	3	3	3	0	S	0	0	0	0	0	0	0
									W	3000	3000	3000	3000	3000	1500	-50
		76.1	79.7	83.9	88.1	92.5	97.1		O	200	200	200	200	200	0	∞
GENERAL SUPPORT	3	7	7	7	7	7	7	0	L	2000	2000	2000	2000	2000	3710	86
									S	500	500	500	500	500	0	∞
		173.4	182.1	191.2	200.7	210.8	221.3		W	1000	1000	1000	1000	1000	960	-4
TOTAL		32	32	32	32	32	34	6	O	1800	1800	1800	1800	1800	2195	22
									L	630	630	630	630	630	630	0
		793.9	833.6	875.3	919.0	965.0	1073.2		S	0	0	0	0	0	0	0
									W	470	470	470	470	470	600	28
									O	3200	3200	3200	3200	3200	3651	14
											L	11650	11650	11650	11650	11650
									S	2000	2000	2000	2000	2000	0	∞
									W	7470	7470	7470	7470	7470	6000	-20
											O	24320				
									L							
									S							
											W					
									O							
									L							
											S					
									W							
									D							
											L					
									S							
									W							

APPENDIX A- (BUDGET/PERSONNEL/SPACE REQUIREMENTS)

TRAINING CENTER	(2) Justi- fication	(3) Personnel/Budget; FY76-FY81						% Change Personnel Only	(4) Space by type; by FY						% Change	
		76	77	78	79	80	81			76	77	78	79	80		81
NOAA Training Center	1,2,3	36	44	49	54	59	59	64	O	6300	6300	6300	6300	6300	10150	61
		812.0	871.0	973.0	1750.0	1177.0	1279.0		L	23250	23250	23250	23250	23250	68700	195
									S	4350	4350	4350	4350	4350	12000	176
									W	1100	1100	1100	1100	1100	3000	173
									O	35000					93850	168
									L							
									S							
									W							
									O							
									L							
									S							
									W							
									O							
									L							
									S							
									W							
									O							
									L							
									S							
									W							
									O							
									L							
									S							
									W							

APPENDIX A - (BUDGET/PERSONNEL/SPACE REQUIREMENTS)

NORTHWEST ADMINISTRATIVE SERVICE OFFICE	(2) Justification	(3) Personnel/Budget; FY76-FY81						% Change Personnel Only	(4) Space by type; by FY						% Change
		76	77	78	79	80	81		76	77	78	79	80	81	
NASO DIRECTORATE E	2,3	5	5	5	5	5	5	0	494	515	515	830	830	1652	234
		313.4	349.8	402.9	501.7	570.4	602.7								
FIELD FINANCE OFFICE X	3	24	25	25	26	26	30	25	3494	3494	3494	3494	3494	3976	14
		284.0	324.4	335.0	339.2	359.6	381.1								
ADMINISTRATIVE OPERATIONS DIVISION CONTRACTING/PROCUREMENT X	1,3	12	14	15	17	17	17	42	1111	1236	1236	2360	2360	8988	709
		158.1	194.5	219.4	265.5	294.1	311.7								
ADMINISTRATIVE OPERATIONS DIVISION FACILITIES MGMT/OPERATIONS SUPPORT X	1,3	12	13	14	20	23	27	125	617	617	617	2552	2552	3067	397
		158.1	178.3	199.7	314.6	373.9	426.5								
PERSONNEL DIVISION X	2,3	25	25	25	29	29	33	32	3827	3827	3827	6792	6792	8305	117
		370.9	428.0	453.0	512.0	542.0	575.0								
GENERAL COUNSEL X	1,2,3	5	7	9	11	11	14	180	741	741	741	2251	2251	2979	302
		112.0	184.0	170.0	195.0	227.0	249.0								
VISITOR/MANAGEMENT INFORMATION N	1	0	0	0	0	2	2	-	0	0	0	0	450	2400	-
		-	-	-	-	30	70								
TOTALS EXCLUSIVE OF VISITOR CENTER		83	89	93	108	111	126	52	10284	10430	10430	18279	18279	28967	182
		1396.5	1659.0	1780.0	2128.0	2367.0	2546.0								
									2963	2963	2963	25538	25538	26500	794

13247

55467

319

APPENDIX A - (BUDGET/PERSONNEL/SPACE REQUIREMENTS)

SCIENTIFIC PUBLICATIONS EDS LIBRARY EMPLOYEE SERVICES	(2) Justifi- cation	(3) Personnel/Budget; FY76-FY81						% Change Personnel Only	(4) Space by type; by FY						% Change	
		76	77	78	79	80	81		O	76	77	78	79	80		81
SCIENTIFIC PUBLICATIONS	3	11	12	12	13	14	15	36	O	3000	3000	3000	2655	2655	2900	-3
		470.3	470.3	517.3	580.7	650.4	727.1		L							
									S							
									W	745	745	745	0	0	0	-
EDS LIBRARY	1 & 3	0	0	0	0	0	3	-	O	0	0	0	0	0	8960	-
		0	0	0	0	0	104.3		L							
									S							
EMPLOYEE SERVICES	1	0	0	0	0	0	12	-	W							
		0	0	0	0	0	-		O	0	0	0	0	0	11620	-
									L							
									S							
									W							
									O							
									L							
									S							
									W							
									O							
									L							
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									S							
									W							

1. DATE October 1976	2. FISCAL YEAR 78	CONSTRUCTION PROJECT DATA (Continued)	3. DEPARTMENT COMMERCE	4. INSTALLATION SAND POINT, SEATTLE, WASHINGTON
5. PROJECT NUMBER A5 B000/FJ 1101		6. PROJECT TITLE WESTERN REGIONAL CENTER		

APPENDIX B ECONOMIC ANALYSIS

1. SUMMARY

The Payback Illustration included as part of this analysis indicates the advantage of the Federal purchase alternative in meeting NOAA's requirement for facilities at Sand Point. Payback in Fiscal Year 1993, 17 years after commencement of the project and 11 years after its completion, indicates that the construction by NOAA of the required facilities is extremely desirable.

2. INTRODUCTION

a. Applicable Guidelines

This economic analysis has been performed in accordance with Office of Management and Budget Circular No. A-104, dated June 14, 1972.

b. Basis of Analysis

(1) All economic costs incurred as a result of Federal lease or acquisition of land and improvements at Sand Point have been considered in this analysis. Where costs occur in either the lease or purchase alternatives, they have been included. Where equal costs should be assigned to both lease and purchase alternatives, they have been excluded.

(2) All costs shown in the purchase cost calculations and lease cost calculations have been estimated in constant 1976 dollars. No inflation has been built into any of the costs shown.

(3) The acquisition alternatives have been compared on the basis of the expected stable program use period for Sand Point.

(4) The decision to build or lease facilities at Sand Point has been made on the basis of the present values of alternative lease and purchase cost projections.

c. Exceptions to Guidelines

OMB Circular No. A-104 has been rigorously complied with. One of the three required cost projection alternatives, however, has not been examined. The lease-purchase (or purchase-contract) alternative has been

1. DATE October 1976	2. FISCAL YEAR 78	3. DEPARTMENT COMMERCE	4. INSTALLATION SAND POINT, SEATTLE, WASHINGTON
5. PROJECT NUMBER A5 B000/FJ 1101		6. PROJECT TITLE WESTERN REGIONAL CENTER	

CONSTRUCTION PROJECT DATA
(Continued)

APPENDIX B - (Economic Analysis)

intentionally excluded. Neither NOAA nor GSA have lease-purchase authority at this time. For the purposes of this economic analysis, NOAA intended to examine the lease-purchase alternative despite lacking authority to execute this alternative. NOAA was advised by GSA that arrangements for lease-purchase are far from standard and that this alternative, for a project of the magnitude of Sand Point, could only be examined through actual negotiations with a developer. Since the construction alternative appears to be considerably more attractive than the lease alternative, it is doubtful that a lease-purchase alternative would result in any significant difference in payback period.

3. Assumptions

a. Period of Analysis

NOAA anticipates continuing program use of the Sand Point Facilities for at least 30 years. This analysis assumes a long-term lease, periodically renewed at the last constant dollar payment. It should be noted from the payback illustration, which plots total present value against fiscal year for both the lease and purchase alternatives, that a lesser period, say 20 years, would not affect the conclusion that the lease alternative has a higher present value than the purchase alternative.

b. Discount Rate

In accordance with Section 4.f. of OMB Circular No. A-104, a 7% discount rate has been applied to all cost projections to determine present value.

c. Schedule of Construction and Start of Lease Payments

Construction expenditures and the start of lease payments have been assumed to occur on schedules as close to reality as possible. Construction costs are shown as occurring in the actual year that obligation is anticipated. Lease payments start on a schedule consistent with the actual value, in constant dollars, of work in place.

d. Exclusion of Certain Costs

In accordance with Section 6 of OMB Circular No. A-104, the costs for repair and improvement, operation and

1. DATE October 1976	2. FISCAL YEAR 78	CONSTRUCTION PROJECT DATA (Continued)	3. DEPARTMENT COMMERCE	4. INSTALLATION SAND POINT, SEATTLE, WASHINGTON
5. PROJECT NUMBER A5 B000/FJ 1101		6. PROJECT TITLE WESTERN REGIONAL CENTER		

APPENDIX B - Economic Analysis

maintenance, property taxes, and insurance premiums have been excluded from both of the alternative cost projections since they are estimated to be the same for each alternative.

4. Federal Purchase Alternative

a. Computation of Imputed Cost of Property

To determine the imputed costs of NOAA's Sand Point property, the actual land value at the time of transfer was determined by GSA. GSA's estimate was based on the highest and best use value which assumes residential use. The value of the land at the time of transfer was then reduced by the amount of money a developer would have to expend for demolitions and other site improvements in order to sell for use as residential property. The result was GSA's estimate of the fair market value of the property in December 1974. For purposes of this analysis, the 1974 value of the property was inflated at 8% per year to bring the imputed cost of the property into Fiscal Year 1976 dollars, the constant dollars used throughout this analysis. The computation of imputed cost of the property is shown below:

<u>Imputed Cost of Property</u>	<u>\$ (Millions)</u>
Actual Land Value at Time of Transfer	3.70
Less GSA Estimated Demolition & Site Improvement Costs for Sale for Residential Use	<u>0.95</u>
GSA Estimated Fair Market Value of Property (rounded)	2.70
Inflated to BOY FY 76 (8%)	3.15

b. Computation of 1976 Dollar Construction Costs

Although 1976 dollar costs of construction are used throughout the Project Development Plan as the basis for estimating, the conversion of current dollar costs of construction to constant 1976 dollar cost of construction

1. DATE October 1976	2. FISCAL YEAR 78	CONSTRUCTION PROJECT DATA (Continued)	3. DEPARTMENT COMMERCE	4. INSTALLATION SAND POINT, SEATTLE, WASHINGTON
5. PROJECT NUMBER A5 B000/FJ 1101		6. PROJECT TITLE WESTERN REGIONAL CENTER		

APPENDIX B - Economic Analysis

is shown below. Since a specific escalation factor of 8% was used in constructing the current year funding requirements shown in the Property Development Plan, it is more appropriate to de-escalate by 8% than to use the deflation method shown in Attachment A to OMB Circular No. A-104.

Fiscal Year	Current \$ Cost	De-Escalation to FY 76	1976 Constant \$ Cost
1976	1.000	1.00000	1.000
1977	0.970	0.92593	0.900
1978	15.479	0.85734	13.271
1979	15.464	0.79383	12.276
1980	17.441	0.73503	12.820
1981	17.220	0.68058	11.720
1982	<u>16.268</u>	0.63017	<u>10.252</u>
Total	83.842		62.239*

c. Computation of Residual Value

The computation of residual value of the site and improvements is shown below. It should be noted that, for consistency, the 30-year period of analysis commences in Fiscal Year 1977. Since construction will not be completed until Fiscal Year 1982, decay and obsolescence will be greater, and the residual value of construction will be less than the amount indicated by the guidelines. The actual computation follows:

- * Period of Analysis is 30 years
- * From Attachment B, OMB Circular A-104:
 - Building Decay-Obsolescence Factor for 30 years is 0.59787
 - Site Appreciation Factor is 1.5638

* This is constant dollar reduction to 1976. Figure in Par. 4a. is Construction Estimate.

1. DATE October 1976	2. FISCAL YEAR 78	3. DEPARTMENT COMMERCE	4. INSTALLATION SAND POINT, SEATTLE, WASHINGTON
5. PROJECT NUMBER A5 B000/FJ 1101		6. PROJECT TITLE WESTERN REGIONAL CENTER	

APPENDIX B - Economic Analysis

1976 Dollar Cost of Construction
Including Design & Management Costs = \$62.24M
X .59787

Residual Value of Construction = \$37.21M

1976 Dollar Value of Site = \$ 3.15M

Residual Value of Site = \$ 4.926M

Total Residual Value = \$42.14M

d. Discussion of Present Value

After applying the 7% discount factor to the constant dollar construction costs and adding the imputed property cost, the total present value of the construction alternative increases rapidly to the end of construction, but afterward remains at the same level for the useful life of the project. At the end of the period of analysis, the present value is reduced by the present value of the residual value of the site and improvements. As discussed above, repair and improvement costs, repair and maintenance costs, property taxes, and insurance premiums have not been included in the purchase cost calculations since they are identical when considering the lease cost alternative. As shown in the table of Present Value Purchase Cost Calculations, the total present value for the Federal purchase alternative, calculated at 7%, after 30 years, is \$45.96M.

5. LEASE ALTERNATIVE

a. Computation of Developer's Capital Recovery Annual Payments

In order to establish a reasonable stream of lease payments, NOAA contacted developers in the Seattle area to obtain information regarding the method used by developers to compute required annual lease payments. The method described in the paragraph below reflects the findings of NOAA's economic analysis for this issue. A developer will compute the annual payments in the following manner:

1. DATE October 1976	2. FISCAL YEAR 78	CONSTRUCTION PROJECT DATA (Continued)	3. DEPARTMENT COMMERCE	4. INSTALLATION SAND POINT, SEATTLE, WASHINGTON
5. PROJECT NUMBER A5 B000/FJ 1101		6. PROJECT TITLE WESTERN REGIONAL CENTER		

APPENDIX B Economic Analysis

(1) To the current long-term interest rate, the rate a developer must pay for his financing, add two percentage points for the developer's overhead and profit. Divide this sum by 100 and multiply by the total amount of capital required for the project, yielding the annual payment for capital recovery. To the annual payment for capital recovery, add the annual amounts for taxes, maintenance and operations, insurance, etc.

(2) For the purposes of this analysis, repair and improvements costs, operation and maintenance costs, property taxes, and insurance premiums, associated with the lease alternative, have been excluded since they are identical in the Federal purchase alternative. Therefore, the only cost reflected in the present value lease-cost calculations is the capital recovery payment to the developer. Standard practice dictates that the capital recovery payment, computed by the above method, would be renegotiated between the developer and GSA after five years; therefore, the 1976 dollar value of the payments have been considered to be constant dollars. Any other approach would require inflation of the amounts indicated in five year increments, with subsequent deflation as indicated in Circular No. A-104.

(3) The computation of the Developer's Capital Recovery Annual Payments is shown below. For the Fiscal Year 1976 through 1982, the annual payments have been computed as a percentage of the annual payment after completion of construction, based on the amount of work in place at the start of the indicated fiscal year. This is a reasonable approach since developers view buildings and improvements as individual cost centers which are developed incrementally. As the cost centers are completed, the developers will obtain incremental funding for the next phase of the construction project.

Computation of Developer's Capital Recovery Annual Payments

Current Long-Term Interest Rate	9.5%
Developer's Overhead & Profit	<u>2.0</u>
Total	11.5%

Total Capital for Project in 1976 Dollars:	
Construction	62.24M
Property	<u>3.15</u>
Total Capital	65.39M

Annual capital Recovery Payments	7.52M
$\frac{11.5}{100} \times (65.39) = 7.52M$	

1. DATE October 1976	2. FISCAL YEAR 78	CONSTRUCTION PROJECT DATA (Continued)	3. DEPARTMENT COMMERCE	4. INSTALLATION SAND POINT, SEATTLE, WASHINGTON
5. PROJECT NUMBER A5 B000/FJ 1101		6. PROJECT TITLE WESTERN REGIONAL CENTER		

APPENDIX B Economic Analysis

Col.(1) Fiscal Year	Col.(2) Work in Place Start FY	Col.(3) Annual Payment
1976	3.15	0.36
1977	4.15	0.48
1978	5.05	0.58
1979	18.32	2.11
1980	30.60	3.52
1981	43.42	4.99
1982	55.14	6.34
1983	65.39	7.52
2012	65.39	7.52

*Computed as follows: $\frac{7.52 \text{ (Col.(2))}}{65.39}$

b. Discussions of Present Value

The stream of payments associated with the lease of facilities at Sand Point for NOAA builds incrementally through construction to a constant value annual payment of 7.52M. The total present value of this stream of payments commences at zero, builds to the end point of construction, and continues to build through the useful life of the facility. In fact, the total present value of the stream of lease payments continued to increase beyond the period of this analysis. The sum of the present value of capital recovery payments, i.e., lease payments, after 30 years, figured at 7%, is \$70.98 million.

1. DATE October 1976	2. FISCAL YEAR 78	3. DEPARTMENT COMMERCE	4. INSTALLATION SAND POINT, SEATTLE, WASHINGTON
5. PROJECT NUMBER A5 B000/FJ 1101		6. PROJECT TITLE WESTERN REGIONAL CENTER	

Appendix B Economic Analysis

PRESENT VALUE LEASE COST CALCULATIONS

(WESTERN REGIONAL CENTER, SAND POINT, SEATTLE, WA.)

(\$ millions)

FY	Year No.	Constant \$ Capital Recovery Payments	7% Discount Factor	Present Value Capital Payments
1976	0	0.36	1.000	0.36
77	1	0.48	.935	0.45
78	2	0.58	.873	0.51
79	3	2.11	.816	1.72
1980	4	3.52	.763	2.69
81	5	4.99	.713	3.56
82	6	6.34	.666	4.22
83	7	7.52	.623	4.68
84	8		.582	4.38
85	9		.544	4.09
86	10		.508	3.82
87	11		.475	3.57
88	12		.444	3.34
89	13		.415	3.12
1990	14		.388	2.92
91	15		.362	2.72
92	16		.339	2.55
93	17		.317	2.38
94	18		.296	2.23
95	19		.277	2.08
96	20		.258	1.94
97	21		.242	1.82
98	22		.226	1.70
99	23		.211	1.59
2000	24		.197	1.48
01	25		.184	1.38
02	26		.172	1.29
03	27		.161	1.21
04	28		.150	1.13
05	29		.141	1.06
2006	30	7.52	.131	0.99
TOTAL				70.98

1. DATE October 1976	2. FISCAL YEAR 78	3. DEPARTMENT COMMERCE		4. INSTALLATION SAND POINT, SEATTLE, WASHINGTON	
5. PROJECT NUMBER A5 B000/FJ 1101		6. PROJECT TITLE WESTERN REGIONAL CENTER			

APPENDIX B - (Economic Analysis)

PRESENT VALUE PURCHASE COST CALCULATIONS
(in millions)
WESTERN REGIONAL CENTER, SAND POINT, SEATTLE, WA.

Fiscal Year	Year No.	CONSTANT DOLLARS		7% Discount Factor	PRESENT VALUE		Total Present Value	
		Imputed Property Cost	Constr. Costs		Imputed Property Cost	Constr. Costs		
1976	0	3.15	1.00	1.000	3.15	1.00	4.15	
77	1		0.90	.935		0.84	0.84	
78	2		13.27	.873		11.58	11.58	
79	3		12.28	.816		10.02	10.02	
80	4		12.82	.763		9.78	9.78	
81	5		11.72	.713		8.36	8.36	
1982	6		10.25	.666		6.83	6.83	
n								
n+1								
n+2								
n+...								
2006	30			.131				
			(42.14)			(5.52)	(5.52)	
TOTAL PRESENT VALUE					3.15	48.41	5.52	46.04

1. DATE October 1976	2. FISCAL YEAR 78	CONSTRUCTION PROJECT DATA (Continued)	3. DEPARTMENT COMMERCE	4. INSTALLATION SAND POINT, SEATTLE, WASHINGTON
5. PROJECT NUMBER A5 B000/FJ 1101		6. PROJECT TITLE WESTERN REGIONAL CENTER		

APPENDIX B - (Economic Analysis)

PRESENT VALUE COST SUMMARIES FOR ALTERNATIVE METHODS OF ACQUISITION
(in millions)
WESTERN REGIONAL CENTER, SAND POINT, SEATTLE, WA.

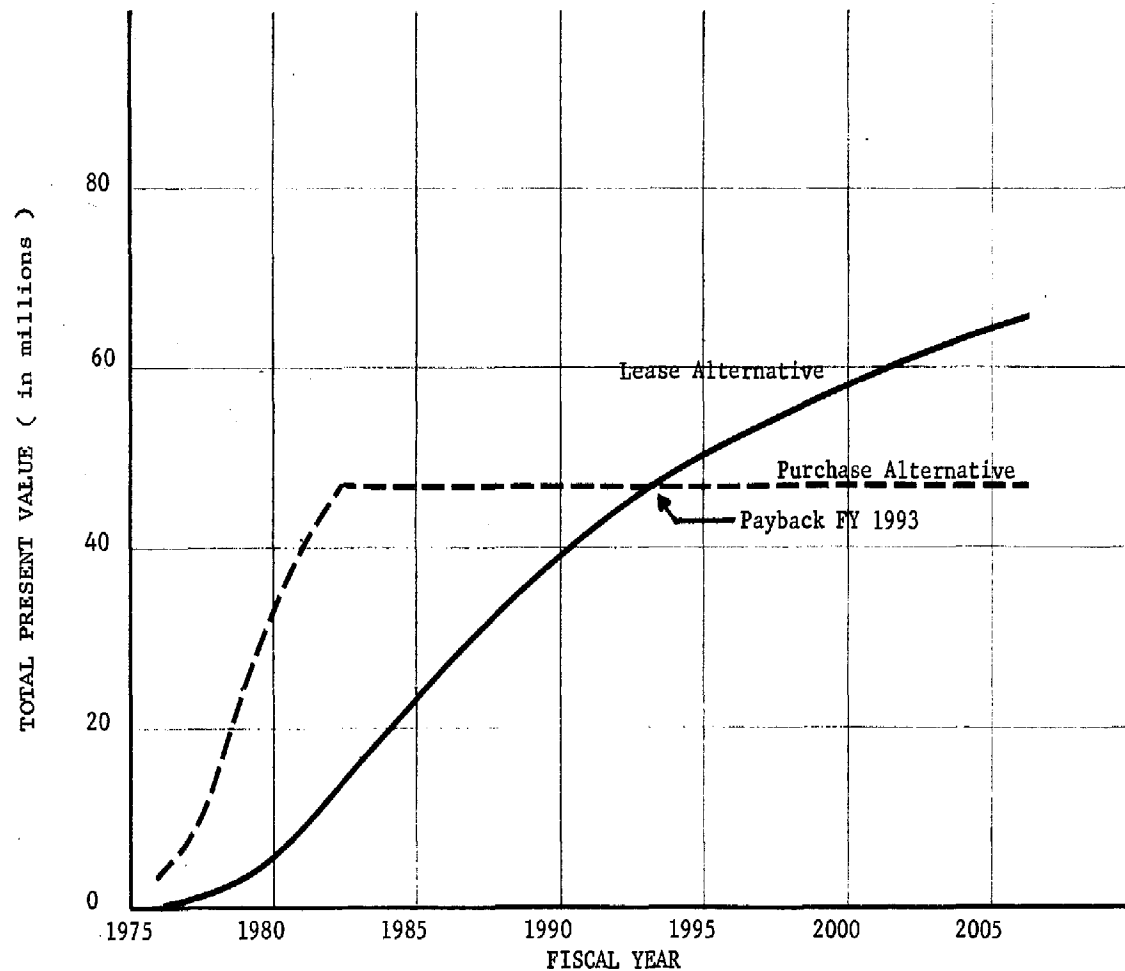
Item	30 years; 7%
PURCHASE:*	
Site	3.15
Improvements	<u>48.41</u>
Subtotal	51.56
Less residual value	<u>5.52</u>
Total ...	<u><u>46.04</u></u>
LEASE:*	
Capital recovery payments to developer	<u><u>70.98</u></u>
LEASE - PURCHASE (or PURCHASE - CONTRACT)**	
<p>*Operation and maintenance costs are borne by the Government and are assumed to be identical for all three acquisition methods. Therefore, they are omitted in this comparison. Imputed insurance premiums are estimated to be negligible relative to other costs and therefore omitted.</p> <p>**Omitted (See par:2.C)</p>	

1. DATE October 1976	2. FISCAL YEAR 78	3. DEPARTMENT COMMERCE	4. INSTALLATION SAND POINT, SEATTLE, WASHINGTON
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5. PROJECT NUMBER A5 B000/FJ 1101	6. PROJECT TITLE WESTERN REGIONAL CENTER
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Appendix B-(Economic Analysis)

PRESENT VALUE PAYBACK PERIOD FOR LEASE VS. CONSTRUCTION
NOAA WESTERN REGIONAL CENTER, SAND POINT, SEATTLE, WASH.



1. DATE October 1976	2. FISCAL YEAR 78	3. DEPARTMENT COMMERCE	4. INSTALLATION SAND POINT, SEATTLE, WASHINGTON
5. PROJECT NUMBER A5 B000/FJ 1101		6. PROJECT TITLE WESTERN REGIONAL CENTER	

CONSTRUCTION PROJECT DATA
(Continued)

APPENDIX C - TRAINING LOCATION ANALYSIS

1. Justification

As the only major element of the Sand Point facility not already located in Seattle, the Education Building deserves particular justification. NOAA has a large and growing need for specialized training directly related to its mission. This training ranges from highly technical electronics maintenance of NOAA specialized equipment to Equal Employment training related to NOAA Affirmative Action Plans. Such a broad program of training requires a facility in close proximity to a wide range of NOAA operations and near a university with oceanic and atmospheric science departments. No such facility exists in NOAA today, but its need is apparent to NOAA management and Sand Point is believed to be the ideal location. The Kansas City Technical Training Center can provide a nucleus, but the Western Regional Center has the potential to be more inclusive.

The size and location of the Education Building was determined on the basis of: (a) current and future requirements, (b) examination of alternatives available consistent with NOAA's mission and management philosophy and (c) programmatic considerations. Even though the major considerations have been programmatic, there also exists a clear economic basis for location of the NOAA Training Center at Sand Point. For example, if the Kansas City Technical Training Center, is not moved to Seattle, four (4) to six (6) instructors will have to be hired for Sand Point technical training and considerable duplicate equipment will have to be purchased. The cost of such duplication has been estimated at \$400K (projecting a need for five instructors, GS-11, \$100K for equipment and duplicate space, training facilities, library materials, and other similar resources.

Travel costs involved in transporting students to and from a Seattle training site have been studied extensively. Superficially, it appears that it would be more expensive to transport students to a location on the west coast. Seattle is the largest concentration of employees outside the Washington, D.C. area. NOAA has extensive operations in the Pacific and Alaska and has employees scattered throughout the contiguous United States. Other concentrations can be found in Boulder, Colorado, and Miami, Florida. More NOAA employees are trained in Seattle than Kansas City. Considering the distribution of the trainees, it is NOAA's conclusion that the aggregate cost of transportation is little effected by the location of the training site.

The prime economic consideration regarding location of NOAA training is to find a site contiguous with many operating elements so that the trainees will be able to study in a working environment close to actual operating problems of the NOAA ships and laboratories. Sand Point offers such an environment. There is actual known location in the United States which meets this requirement.

1. DATE October 1976	2. FISCAL YEAR 78	3. CONSTRUCTION PROJECT DATA (Continued)	4. DEPARTMENT COMMERCE	5. INSTALLATION SAND POINT, SEATTLE, WASHINGTON					
6. PROJECT NUMBER A5 B000/FJ 1101		7. PROJECT TITLE WESTERN REGIONAL CENTER							

Appendix C (Training Location Analysis)

2. Location Analysis

a. Current and Future Requirements: The following presents an analysis of site alternatives based on future requirements and other evaluation criteria. A student population projection is shown in the following table, based upon NOAA training data extrapolated through 1982.

TRAINING REQUIREMENTS
(Nos. of Personnel)

FISCAL YEAR

<u>Location</u>	<u>Escalation Factor</u> ^{1/}	75	76	77	78	79	80	81	82
Wash. D.C. Area	4%	5152	5338	5500	5720	5950	6180	6430	6690
Kansas City	14%	725	935	1011	1133	1290	1470	1680	1900
Seattle	17%	1301	1576	1850	2170	2530	2960	3470	4060
TOTAL NOAA ^{2/}	12%	8075	9140	10200	11400	12700	1420	15900	17800

^{1/} Escalation factor based on historical data.

^{2/} Other NOAA includes the aggregate of all other training requests.

b. Analysis of Alternatives:

Possible alternatives to expanding training requirements are:

- (1) Expand existing Kansas City Facility.
- (2) Relocate and remain in Kansas City.
- (3) Relocate to some other facility.

1. DATE October 1976	2. FISCAL YEAR 78	CONSTRUCTION PROJECT DATA (Continued)	3. DEPARTMENT COMMERCE	4. INSTALLATION SAND POINT, SEATTLE, WASHINGTON
5. PROJECT NUMBER A5 B000/FJ 1101		6. PROJECT TITLE WESTERN REGIONAL CENTER		

Appendix C (Training Location Analysis)

The existing facility in Kansas City is inadequate and increasingly uneconomic to maintain, GSA has scheduled it for demolition in the 1980 time frame. This eliminates alternative 1 and 2 as long term considerations. The clear need for an educational facility shown in the table on requirements indicates that some other facility be procured. NOAA has considered primarily from programmatic reasons that such a facility could best be located in one of the following locations:

- a. Washington D.C. Area
- b. Seattle
- c. Kansas City

These locations were evaluated by assigning ratings based on six (6) equally weighted location factors:

1. Ratio to location to total future requirements. Scored as: $\frac{\text{FY 82 Requirements at Location} \times 10}{\text{FY 82 Total NOAA Requirements}}$
 - Kansas City = $\frac{19000}{17800} = 1.1$
 - Washington D.C. = $\frac{66900}{17800} = 3.8$
 - Seattle = $\frac{40600}{17800} = 2.3$
2. Colocation with major line components (Scale 1 to 10).
3. Access to ships and ship support facilities. (Scale 1 to 10).
4. Ability to provide training for all NOAA fields of activity (Major Programmatic Factor) (Scale 1 to 10).
5. Access to major university with major atmospheric programs (Scale 1 to 10, see matrix).
6. Access to major university with major oceanic programs (Scale 1 to 10, see matrix).
7. Ability to expand to meet needs beyond FY 82 (Scale 1 to 10).

1. DATE October 1976	2. FISCAL YEAR 78	CONSTRUCTION PROJECT DATA (Continued)	3. DEPARTMENT COMMERCE	4. INSTALLATION SAND POINT, SEATTLE, WASHINGTON
5. PROJECT NUMBER A5 B000/FJ 1101		6. PROJECT TITLE WESTERN REGIONAL CENTER		

Appendix C - (Training Location Analysis)

ANALYSIS OF ALTERNATIVE LOCATION
(Location Factors)

<u>Location</u>	<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>5</u>	<u>6</u>	<u>7</u>	<u>Total</u>
Kansas City	1.1	2	0	3	1	0	2	9.1
Washington, D.C.	3.8	9	3	7	3	4	10	39.8
Seattle	2.3	8	10	10	6	6	10	52.3

Based on the location considerations the Seattle area is six (6) times more favorable than Kansas City and significantly more favorable than second choice, the Washington, D.C. area.

3. Curriculum Considerations

It is planned that the new NOAA Education Center at Sand Point will support the training needs of NOAA in the following areas.

a. Ocean Trades Training

This training is for vessel employees and technicians, including courses for electronic technicians, surveying technicians and yeomen is planned for the Sand Point facility. This training has not been accomplished effectively and must be done. It will utilize many of the same sort of resources now available in Kansas City, but will also utilize NOAA vessels while in port at Sand Point. This is not possible with existing training facilities.

b. Electronic Support Program:

Two categories of training required. First, there is need for generalized electronic training for all technicians. First year requirements envision a 4-week course based on the current "Fundamentals of Linear Circuits and Digital Logic" course. This course would be expanded to include the required prerequisites needed by NOAA technicians in order to satisfactorily absorb the course material. Presentation of this 4-week course eight times a year with a student load of 8 to 12 attendees (4 to 6 from each coast). This would require the equivalent of one instructor full time to present the course. Only general purpose classrooms and equipment would be required for this category of training.

1. DATE October 1976	2. FISCAL YEAR 78	3. DEPARTMENT COMMERCE	4. INSTALLATION SAND POINT, SEATTLE, WASHINGTON														
5. PROJECT NUMBER A5 B000/FJ 1101		6. PROJECT TITLE WESTERN REGIONAL CENTER															
<p>Appendix C - <u>(Training Location Analysis)</u></p> <p>Second, there is a need for specialist training on specific pieces of electronic equipment. These courses would last 2 weeks each and cover such equipment types for:</p> <p>Communications Navigation Acoustics Data Acquisition and Processing Scientific Instrumentation (oceanographic survey, etc.)</p> <p>. Under present conditions, equipment in use would have to be made available for such training. As an adjunct to these maintenance courses, operator-oriented courses of 1-week duration on these same systems are also required. (It now appears that many NOAA equipment maintenance problems may be user problems stemming from lack of knowledge of how to use the system and its operational limitations.) The equivalent of one instructor full time would also satisfy the man-hour requirements for these courses. In practice, different instructors would have to be utilized as no one person could teach such a broad range of subjects.</p> <p>It is planned that the preceeding courses will be given at least twice a year so that Electronics Technicians be scheduled into the courses during rotating work periods ashore. In addition, one of these two courses should be given in December or January of each year so that the Wage Marine Electronic Technicians could be scheduled to attend during the winter in-port period.</p> <p>c. <u>Marine Engineering Support:</u></p> <p>NOAA anticipates four 1-week courses in ship stability and damage control, with eight to 10 attendees per course. These would require standard classroom space with no need for facility-provided training aids.</p> <p>The Electronics Engineering Division of the National Ocean Survey has indicated a need for the following courses:</p> <table> <tr> <td>Electronics</td> <td>-general theory</td> </tr> <tr> <td>Radar</td> <td>-general theory</td> </tr> <tr> <td>Gyrocompass</td> <td>-general theory</td> </tr> <tr> <td>Communications</td> <td>-for FCC License</td> </tr> <tr> <td>Digital Logic</td> <td>-general theory</td> </tr> <tr> <td>Sound Propagation in Sea Water</td> <td>-general theory</td> </tr> <tr> <td>Transducer theory</td> <td>-general theory</td> </tr> </table>				Electronics	-general theory	Radar	-general theory	Gyrocompass	-general theory	Communications	-for FCC License	Digital Logic	-general theory	Sound Propagation in Sea Water	-general theory	Transducer theory	-general theory
Electronics	-general theory																
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Sound Propagation in Sea Water	-general theory																
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1. DATE October 1976	2. FISCAL YEAR 78	CONSTRUCTION PROJECT DATA (Continued)	3. DEPARTMENT COMMERCE	4. INSTALLATION SAND POINT, SEATTLE, WASHINGTON
5. PROJECT NUMBER A5 B000/FJ 1101		6. PROJECT TITLE WESTERN REGIONAL CENTER		

Appendix C - (Training Location Analysis)

The Pacific Marine Center requires facilities for generalized use with audio-visual systems. Training is needed in dismantling and rebuilding small diesel engines, outboard motors, and other launch equipment. NOAA Commissioned Officer and Wage Marine training course will occur generally during the winter in-port season (December thru February). Training will be held once each year, expected class size will vary from 6 to 30 students. General Schedule training courses will take place throughout the year.

d. Cartography and Survey:

Courses are required to demonstrate leveling procedures and a base line to operate electronic distance measuring equipment, a test loop will be established near the Education Building to provide NOAA officers training in combined geodetic operations.

The Cartography Course will present the theory of cartography with brief exposure to each phase such as photogrammetry, geodesy, gravity and basic compilation techniques. This is presently done by on the job training and is not the best approach.

4. Facility Requirement

Functional Space Requirements were developed in cooperation with GSA using GSA standards for facilities of this function, based on the student population analysis. Utilizing current experience at both Seattle and the Kansas City Technical Training Center, the Education Building has been planned for a permanent staff of 59 and a total peak student population of 400, which represents 10% of the expected annual student population, including projected Seattle and Kansas City student population consolidation, plus an additional 5% for new programs.

NOAA's mission will also be served by use of the Education Center facilities to present national or international seminars or meetings to which prominent scientists are invited. The facility will accommodate meetings and conferences of 30 to 150 persons. This portion of the facility may also be made available to other public and private organizations for their use.

Approximately 1,000 square feet of space in the Education Building is designed to accommodate the information service center for that building. The recommended space will accommodate the materials and equipment necessary to provide service to the Education Building staff and trainees. The Education Building will be staffed by a combination of professional and technician personnel from present personnel.

A comprehensive library of NOAA products located at the NOAA Education Building is provided for use by the academic community.

1. DATE October 1976	2. FISCAL YEAR 78	CONSTRUCTION PROJECT DATA (Continued)	3. DEPARTMENT COMMERCE	4. INSTALLATION SAND POINT, SEATTLE, WASHINGTON
5. PROJECT NUMBER A5 B000/FJ 1101		6. PROJECT TITLE WESTERN REGIONAL CENTER		

APPENDIX D - Site Alternatives Analysis

1. NOAA New Facilities Policy

Since the creation of NOAA as a component within the Department of Commerce, it has been NOAA policy that geographically separated NOAA activities should be collocated wherever feasible. A high priority application of the policy is in Seattle where the second largest group of NOAA components in the nation is located. Presently, in Seattle, NOAA activities are situated at seven separate locations, of which six are leased; of which, none has the potential to allow the expansion expected in the coming years.

In 1971, when the decision was made to collocate NOAA facilities in Seattle, two considerations were given priority. First, it would be greatly beneficial to accomplishing NOAA operational objectives if all personnel could be accommodated in a single facility in a strongly favorable research atmosphere. Second, there would be considerable operating cost avoidance accruing at a consolidated facility. It was expected that in collocating facilities there would be cost avoidance in the following activities:

- . Reduction of agency travel and vehicle use
- . Reduction in records, files, and library duplications
- . Reduction of local mailing costs
- . Reduction of typing and clerical service requirements
- . Reduction in duplication of specialized technical equipment
- . Reduction in personnel time devoted to work coordination and task communication among various locations
- . Reduction of lease and rent expenditures
- . Prevention of further fragmentation and attendant costs

1. DATE October 1976	2. FISCAL YEAR 78	CONSTRUCTION PROJECT DATA (Continued)	3. DEPARTMENT COMMERCE	4. INSTALLATION SAND POINT, SEATTLE, WASHINGTON
5. PROJECT NUMBER A5 B000/FJ 1101		6. PROJECT TITLE WESTERN REGIONAL CENTER		

Appendix D - (Site Alternatives Analysis)

2. ALTERNATIVES FOR NOAA AND THE SAND POINT SITE

a. Site Alternatives for NOAA

(1) Project Site Alternatives

During 1970 and 1971, NOAA officials conducted several reconnaissance visits to potential sites in the Puget Sound region. With assistance from local government officials, representatives of the State's congressional delegation, and regional Federal agency officials, the following prospective sites were identified: Sand Point, Manchester, Lake Union, Duwamish, Piers 90 and 91, and Fort Worden. The Fort Worden site was subsequently rejected because of its extreme distance from the Seattle metropolitan area and the emerging certainty of substantial development there by the State Parks and Recreation Commission. In October 1972, NOAA formally applied for a portion of Sand Point, indicating a strong preference for the site over the remaining four choices.

In the rural Manchester site, adverse impacts would be high (See Table 2). The natural environment conditions, the social service and utility infra-structure, and housing stocks in that area are far from the capacity to accommodate easily the NOAA Center. Moreover, the likely development of a major portion of the Manchester site as a state park is of significant public value at a lesser overall environmental cost. In contrast, at the Sand Point, Lake Union, Duwamish and Piers 90 and 91 sites, adverse impacts would be relatively slight since the already urbanized context in which they are situated would accommodate the NOAA Center without extensive changes. Higher adverse impacts of a NOAA Center development and operation in the city appear in the peculiarly urban variables of economics, land use, and transportation conditions. An exception would be the short term adverse impact of pier construction which would be least at the Lake Union and Piers 90 and 91 sites where high amounts of dredging would not be required.

The NOAA Center would be a long term economic boon in terms of private income to the relatively undeveloped Manchester area, but it would displace some economically desirable activity at the urban sites. A NOAA Center at Piers 90 and 91 would prevent, in part, the utilization of the existing pier resource by deep draft marine commercial vessels. The Duwamish estuary is committed to commerce as well, though the specific site studied is federally owned, and is in use as a storage and vehicle garage facility. At Lake Union, a NOAA Center would affect commercial ship yard activities and a concrete products facility. Commercial significance of the Sand Point site is a potential but only for recreation-based businesses such as marinas, airports, and racetracks.

1. DATE October 1976	2. FISCAL YEAR 78	3. DEPARTMENT COMMERCE	4. INSTALLATION SAND POINT, SEATTLE, WASHINGTON
5. PROJECT NUMBER A5 B000/FJ 1101		6. PROJECT TITLE WESTERN REGIONAL CENTER	

Appendix D - (Site Alternatives Analysis)

Land use conditions at the urban sites reflect Seattle's historical orientation of commerce toward water navigation resources. In general, Lake Union, the Duwamish estuary, and Piers 90 and 91 are all land to water and water to-land commercial transfer points. Sand Point and Lake Washington, in general, are further from Puget Sound, and have a low level of commercial land use despite the encouragement to commerce, of the ship canal. Thus, a NOAA Center at Lake Union, Duwamish, and Piers 90 and 91 would be in conflict with the existing and future commercial land uses near the sites.

The NOAA Center requires convenient access for employees, official visitors and vendors. Transportation conditions in terms of vehicle access to the center and the environmental consequences of this traffic become important. Among urban sites, Lake Union poses the most difficult traffic situation. Lake Union is banded with arterials, yet connections to freeways, to the University and to residential areas are cumbersome. Piers 90 and 91 are not convenient to freeways and residential areas, yet traffic congestion as a result of a NOAA development would probably not be especially noticeable. Similarly, the Duwamish area would probably absorb NOAA development traffic without noticeable adverse effect. Among the four urban sites, the NOAA Center would probably involve the most traffic change at the Lake Union site with the Sand Point, Piers 90-91 and Duwamish areas causing relatively modest change.

As represented in following table, adverse environmental consequences of the development of the NOAA Center at each of the sites is of two scales; a relatively high degree of adverse impact at Manchester, and much lower at the four urban sites. Moreover, the adverse consequences of NOAA development among the urban sites are not markedly differentiated; a comparison of the impacts does not establish clearly one site as more compelling than another, from an environmental perspective. Thus, since the four urban sites are generally equal in terms of probably adverse impacts from a NOAA development, a more useful evaluation of the sites emerges from an examination of the effectiveness of each site in terms of NOAA's requirements.

(2) Site Evaluations

As a test of the objectivity of selection of the Sand Point site and to update site information, NOAA commissioned a comparative site study. The following table lists the site evaluation criteria and the effectiveness assessments developed in the site study. Each site was rated on a scale of one to ten for each criterion as shown in the upper right-hand corner.

1. DATE October 1976	2. FISCAL YEAR 78	CONSTRUCTION PROJECT DATA (Continued)	3. DEPARTMENT COMMERCE	4. INSTALLATION SAND POINT, SEATTLE, WASHINGTON
5. PROJECT NUMBER A5 B000/FJ 1101		6. PROJECT TITLE WESTERN REGIONAL CENTER		

Appendix D - (Site Alternatives Analysis)

The following table, expresses the paired comparisons in matrix format. The horizontal sum of of the numbers assigned to each criterion represent the aggregate importance or utility of the criterion. To improve the ease of interpretation of the results, the amounts have been proportionately reduced so their sum is 100, instead of 910. The last column in contains the utility value for each criterion. The utility value becomes, in effect, a multiplier in the overall effectiveness of a particular site rating. For example, NOAA values Site Environmental Amenity (10.220) and Environmental Resource Utilization (9.431) relatively high, while Vessel Accessibility (2.967) and Utilities Availability (3.187) are valued relatively low.

Relative development costs for each site were calculated (see Table 5). Estimates were based on a study conducted for NOAA in 1972 by the firm of Naramore, Bain, Brady and Johanson.

Total utility values were obtained by multiplying the utility values by the effectiveness value matrix. Finally the total utility values were divided by the relative site development costs to obtain the utility-to-cost ratios. A computer was used to perform all computations. The results are shown in Table 6.

The results show that the Sand Point site has the highest utility, and it is the most efficient in terms of utility to cost. As a test of the sensivity of the results, the consultant conducted two additional tests. In the first test, all effectiveness values were held constant while the utility values were modified to reflect a much more conservative estimate of the relative importance of each criterion (high weights were reduced; low weights were increased). In the second test, utility values were held constant and four key evaluation criteria were altered. Neither of these tests significantly changed the Total Utility or Utility-to-Cost Ratio ranking of the sites. In the Comparative Site Study, Sand Point proved to be superior to any other site alternative. The study concluded; "(1) In terms of total site utility, the Sand Point location exhibits the highest value-(21% above the second highest); (2) In terms of utility-to-cost ratio, Sand Point represented the best alternative; (3) Sensitivity tests indicate that small variations in utility and effectiveness values do not substantially affect the site ranking results."

1. DATE October 1976	2. FISCAL YEAR 78	3. DEPARTMENT COMMERCE	4. INSTALLATION SAND POINT, SEATTLE, WASHINGTON
5. PROJECT NUMBER A5B000/FJ1101		6. PROJECT TITLE WESTERN REGIONAL CENTER	

TABLE 3. Site Alternatives and Effectiveness Assessments

EFFECTIVENESS CRITERIA	SAND POINT	MANCHESTER	LAKE UNION	DUWAMISH	PIERS 90-91
1. Proximity to Univ. of Wash. (Travel times from U.W.)	10 minutes	120 minutes	10 minutes	30 minutes	30 minutes
2. Site Features (Physical attributes of the site)	PRO Flat; no fill; easy drainage; land stability CON Remove runways; poor bearing soil; piling required; high degree of landscaping required; dredging required	PRO No demolition; good bearing soil; excellent landscaping potential CON Hilly topography; cut & fill needed; long piers required; scattered buildings required; shoreline dredging	PRO Flat surface; fair existing piers CON Narrow land shape; located sites; tall buildings needed; pile foundations; pier space inadequate; landscaping problem	PRO Flat surface; minimal dredging CON Pavement removed; piling required; poor drainage; soil stability problem; landscaping problem	PRO Existing piers; flat surface; no foundation problems; no dredging CON Building demolition; extensive pier & pile repairs; asphalt removal; landscaping problem
3. Moorage Space (5,000 linear feet of vessel moorage required)	PRO Space adequate; wind protection adequate; easy access from buildings to piers CON High demand shoreline	PRO Some wind protection CON Limited space for moorage; poor access from buildings to piers	PRO Wind protection good CON Limited space; poor access from buildings to pier	PRO Wind protection good CON Limited space; poor access from buildings to piers	PRO Adequate space CON Piers too high; no wind protection; poor access from buildings to piers
4. Water Type (Fresh water is the most cost effective)	Fresh water	Salt water	Fresh water	Brackish water	Salt water
5. Special Characteristics (On-shore building space and topography)	Easy expansion; ample space	Some difficulty in expansion; scattered building sites	Split parcels; inefficient space	Poor expansion potential	Poor shape for development; difficult expansion problems
6. Overall Environmental Amenity (Visual and sonic attributes of the site and vicinity)	Scenic views; desirable residential context	Rural atmosphere; attractive scenery	Freeway nearby; partial residential context; industrial atmosphere	Railroad and freeway adjacent; heavily industrialized atmosphere	Railroad nearby; some scenic views; industrial atmosphere
7. Personnel Amenity (Resources available to employees making NOAA an attractive employer)	Housing and services readily available	Outdoor recreation opportunities available; distant from commercial & cultural facilities; rural atmosphere	Easy access to largest variety of houses & services	Housing & commercial choices somewhat limited	Housing & services readily available
8. Housing (Housing choices for employees)	Little change from present employee circumstances	An expensive move required for nearly all employees	Little change from present employee circumstances	Some north end & east side employees would probably relocate	Little change from present employee circumstances
9. Transportation (Public transportation & private vehicle access availability)	Bus service, public service & facility services reasonably available	Public transportation service difficult; facility services difficult	Same as Sand Point	Railways, freeways, Duwamish river & distance from center of city are handicaps	Same as Sand Point
10. Utilities Availability (Water, sewage, storm drainage and electrical energy resources)	Previous Navy use established utility system resources which could be used if some adjustments are made	All utilities would have to be brought to the site	Adjustments & extensive upgrading required	Same as Lake Union	Same as Lake Union
11. Facilities Services (Fire protection, library, technical services, ship provisioning & ship repair & maintenance services)	Necessary services easily available	Services largely remote or absent from the vicinity of site	Same as Sand Point	Out of the usual pattern of needed services delivery	Somewhat out of the pattern of needed services delivery
12. Vessel Accessibility (Time & ease of vessel movement from Puget Sound)	Transit involves locks, four bridges & some contact with other waterway traffic	Minimum time, no obstruction	Transit involves locks, two bridges & contact with other waterway traffic	One bridge & other waterway traffic involved	Minimum: time, no obstructions
13. Site Availability (Land cost & ease of land consolidation)	City favors NOAA use of the site; congressional legislation mandates NOAA use	State plans major park development on the site in the next biennium; small portion used by State & Federal agencies	Except for present NOAA ship base, site is fully utilized by Navy Reserve, commercial activities & City of Seattle. Users would have to be relocated & land purchased.	Most of the site near river is used by Federal agencies (including NOAA). Some private land purchase might be required.	Piers & backup space used by Port of Seattle. Port is negotiating acquisition of available portions.
14. Environmental Resource Utilization (Least adverse primary or secondary environmental impact & State & local policies & priorities regarding environmental quality)	NOAA use would upgrade present circumstances & become a valued community & park feature. Minimum adverse effects.	Proposed park probably of more environmental value than NOAA use which is of an urban character. High adverse impact on surrounding community.	NOAA development would upgrade the facility; minimum adverse effect	Same as Lake Union	This site is best suited as a deepwater port; NOAA use would force such requirements to be met elsewhere, thereby encouraging development of port facilities in river estuaries. High adverse impact.

1. DATE October 1976	2. FISCAL YEAR 78	3. DEPARTMENT COMMERCE	4. INSTALLATION SAND POINT, SEATTLE, WASHINGTON
5. PROJECT NUMBER A5 B000/FJ 1101		6. PROJECT TITLE WESTERN REGIONAL CENTER	
<p>Appendix D - <u>(Site Alternatives Analysis)</u></p> <p>(3) <u>Split Site Alternatives</u></p> <p>Consideration was given to the possibility of consolidating NOAA facilities on two sites, such as building new shore facilities at Sand Point and establishing ship berthing facilities at other locations on Lake Union, Salmon Bay (near Ballard) or in the Duwamish. From the standpoint of vessel moorage and operation alone, a Salmon bay site would be the most attractive, followed by Lake Union, Duwamish, and Sand Point. This finding follows from the fact that the closer the vessel base to Elliott Bay, the more attractive the site.</p> <p>Separate moorage facilities would offer no particular environmental advantage from the standpoint of consequences of construction activity. Also of importance to NOAA, separating vessel moorage from shore-based facilities at Sand Point seriously erodes the operational effectiveness of the NOAA facility consolidation effort. Nearly half of NOAA's personnel are vessel-based or vessel related in work assignments. Close proximity of shore-based and ship-based employees is essential to the effectiveness of a consolidated NOAA Center.</p> <p>In addition, consideration was given to splitting vessel moorage between Sand Point and other fresh water sites on Lake Union, Salmon Bay and Duwamish. This approach yielded no more attractive alternative, in terms of vessel operation utility, than separating all vessel moorage from shore-based facilities at Sand Point.</p> <p>The study concluded that vessel moorage at a Salmon Bay site or a Lake Union site would have a higher utility than at Sand Point when considered only in terms of vessel moorage and vessel operation criteria. The Sand Point site offers a more attractive utility to cost ratio than any other site.</p> <p>(4) <u>No-Project Alternative</u></p> <p>Were the Sand Point site unavailable, NOAA would abandon the facility consolidation project and attempt to continue on a leased facility strategy. This alternative would restrict NOAA activities to limited additional leased space choices for accommodating anticipated growth. Additional new space to augment present facilities would expand the serious operational handicaps resulting from dispersed, inappropriate, and inadequate facilities.</p>			

1. DATE October 1976	2. FISCAL YEAR 78	CONSTRUCTION PROJECT DATA (Continued)	3. DEPARTMENT COMMERCE	4. INSTALLATION SAND POINT, SEATTLE, WASHINGTON
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Appendix D - (Site Alternatives Analysis)

3. ALTERNATIVE USES OF THE SITE

No Action

The no-action alternative could occur if NOAA were to abandon plans for the development, or if federal funds for the planned development were withheld. The site would then remain unused and in its present condition as a part of the former Naval air facility. In the normal course of federal property management, the NOAA site would be declared excess and disposal to another user would take place. It is probably not in the public interest for such valuable urban public property to remain removed from appropriate public or private uses; moreover, there is no natural environmental value which would compel preserving the existing condition of the site.

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5. PROJECT NUMBER A5B000/FJ1101		6. PROJECT TITLE WESTERN REGIONAL CENTER			

EFFECTIVENESS CRITERIA*	1. Institutional Proximity	2. Site Features	3. Moorage Space	4. Water Type	5. Spatial Characteristics	6. Environmental Amenity	7. Personnel Amenity	8. Housing	9. Transportation	10. Utilities Availability	11. Facility Services	12. Vessel Accessibility	13. Site Availability	14. Environmental Resource Utilization	SUM	UTILITY VALUES	
	1. Institutional Proximity	6	4	3	7	5	5	5	2	3	2	1	3	1			4
2. Site Features	4	6	5	6	7	6	5	3	2	1	3	2	4	7	75	8.242	
3. Moorage Space	3	5	6	7	6	5	3	6	7	8	6	9	7	5	85	9.341	
4. Water Type	5	4	7	2	8	4	2	1	5	3	2	0	3	5	81	8.901	
5. Spatial Characteristics	5	3	6	2	5	7	8	9	5	7	8	10	6	5	88	9.670	
6. Environmental Amenity	5	4	5	5	5	9	2	2	0	1	0	3	3	93	10.220		
7. Personnel Amenity	8	5	7	8	7	9	4	6	4	3	7	3	5	8	50	5.495	
8. Housing	7	7	6	9	8	8	4	5	4	7	6	7	9	43	4.725		
9. Transportation	3	3	4	1	2	2	6	5	6	3	4	3	1	45	4.945		
10. Utilities Availability	8	8	7	5	7	8	6	5	4	7	4	8	8	29	3.187		
11. Facility Services	2	2	3	5	3	2	4	5	6	3	6	2	2	60	6.593		
12. Vessel Accessibility	9	9	8	7	10	10	7	6	6	8	4	8	9	27	2.967		
13. Site Availability	1	1	2	3	0	0	3	4	4	2	6	2	1	68	7.472		
14. Environmental Resource Utilization	7	7	6	8	6	9	3	3	3	2	3	7	6	85	9.341		
Totals	3	3	4	2	4	1	7	7	7	8	7	3	4	910	100.00		

*See Table 3 for definitions of Effectiveness Criteria

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CONSTRUCTION PROJECT DATA
(Continued)

Appendix E SEATTLE ORGANIZATIONS AND OPERATIONS

A. Background

With this consolidation and new dimension of activity as an agency, NOAA's components became the nation's major resource to: (1) explore, map or chart the global oceans, their geological formations and geophysical forces, and their mineral and living resources; (2) extend our understanding of critical processes in the atmosphere, the oceans, and in space; (3) warn of impending environmental hazards, such as hurricanes, floods, tsunamis, and tornadoes; (4) monitor, predict and document the gradual and continual changes in climate, marine life distributions, tides and other processes on earth and in space; and (5) restore, maintain, enhance, conserve, and utilize - in a rational manner - the fishery resources of importance to the United States.

Recent national legislation also commits NOAA components to a long-term program of marine environmental assessments, as well as to environmental monitoring of the recovery of the oceans mineral and food resources.

B. NOAA Research and Scientific Service Activities in the Seattle Area

1. Northwest Administrative Service Office:

- Provides procurement and contractual services for the Seattle area components.
- Maintains equipment and property.
- Provides personnel management, employee development, counseling and recruitment services.
- Gives financial management counseling to related agencies, processes financial data; and updates organizational costs in report printouts.
- Provides offices and assistance to the NOAA Office of the General Counsel so that the local field office can provide legal services for the component units.

2. National Weather Service, Weather Service Forecast Office:

- Provides Washington State weather forecasts and information, including severe weather warnings, special forecasts for forest fire control, crop frost protection and river forecasting.
- Maintains and services electronic weather instruments in the Northwest Region.
- Provides marine forecasts to assist commercial and recreational activity.
- Provides Puget Sound area air pollution potential forecasts.
- Gives forecasts to 11 Washington State air terminals for nine air routes across the State, and maintains service offices Seattle-Tocoma International Airport and the FAA Air Route Traffic Control Center at Auburn.

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Appendix E - (Seattle Organizations and Operations)

3. Northwest Regional Office, National Marine Fisheries Service:

- Maintains the Columbia Fisheries Program Office at Portland, Oregon which (1) plans, administers and evaluates the construction and maintenance of hatcheries, fish screens and fishways; (2) helps restore and enhance runs of fish affected by dam construction; (3) studies the economic feasibility of fish production; (4) maintains and protects fish habitats affected by projects requiring Federal permits, water development projects and comprehensive basin planning; and (5) on a National level, formulates functional designs and reviews plans for fish passage and fish protection facilities.
- Conducts marketing programs to improve marketing practices, distribute educational material, supports and manages programs publishing commercial fisheries statistical information; and provides current regional fish marketing information.
- Provides a fishing vessel mortgage insurance program.
- Assists vessel owners in controversies with foreign countries under the Fisherman's Protective Act of 1967 and protect water and marine resources from foreign encroachment and enforces provisions of international fishery agreements.
- Administers a voluntary fish inspection program to improve quality and sanitary conditions in plants, grade fish products and approve fish package labels.

4. Northwest Fisheries Center, National Marine Fisheries Service:

- Administers parts of the Marine Mammal Protection Act of 1972 as it concerns whales, seals, sea-lions and porpoises.
- Administers the Pribilof Islands Management Program which provides for the utilization and conservation of the North Pacific fur seal resource, according to the terms of the Interim Convention for the Conservation of North Pacific Fur Seals. Makes recommendations for the protection of aquatic resources.
- Analyzes effects of serious environmental damage caused by discharges of harmful effluents, thermal changes and dredging operations.
- Provides information on condition of selected, multi-nationally exploited fisheries resources.
- Helps negotiate and monitor international fishery agreements for the Pacific Ocean.
- Develops and evaluates systems for protection of fish from hazardous conditions.

5. Coastal Zone and Estuarine Studies Division,
Northwest Fisheries Center, National Marine Fisheries Service:

- Develops aquaculture technology to facilitate the management of salmon fishery resources of the coastal zone.
- Determines the effects of dams and other development in the Columbia Basin, on fishery resources; and develops systems for the protection of fish from these hazardous conditions.

1. DATE October 1976	2. FISCAL YEAR 78	CONSTRUCTION PROJECT DATA (Continued)	3. DEPARTMENT COMMERCE	4. INSTALLATION SAND POINT, SEATTLE, WASHINGTON
5. PROJECT NUMBER A5 B000/FJ 1101		6. PROJECT TITLE WESTERN REGIONAL CENTER		

Appendix E - (Seattle Organizations and Operations)

6. Marine Mammal Laboratory Division.
Northwest Fisheries Center, National Marine Fisheries Service:

- Administers the Pribilof Islands program to research the North Pacific fur seal.
- Conducts research on the North Pacific whale population.
- Conducts research on marine mammals to insure that they will always be in adequate number to fulfill their ecological role and satisfy recreational, aesthetic and economic needs.

7. Marine Fish and Shellfish Division.
Northwest Fisheries Center, National Marine Fisheries Service:

- Conducts research and provides information on the biology, ecology and utilization of marine resources.
- Provides the technical information base necessary for management policy or negotiation, resource management policy or negotiation, resource management, capital investments, rehabilitation of domestic fishing and policy on the effects of man on marine resources.
- Assists the native population on the Pribilof Islands in developing self-government; and a self-supporting community.

8. Office of Scientific Publications.
National Marine Fisheries Service:

- Collects and maintains manuscripts originating at various National Marine Fisheries Service installations throughout the country.
- Edits, publishes and distributes scientific periodicals and other research reports and documents concerning marine life.

9. Pacific Utilization Research Center
National Marine Fisheries Service:

- Develops new fish product concepts and products from under-utilized fish species and develops new mechanical methods for preparation of minced fish flesh.
- Investigates traditional resources for the improvement of fish products.
- Develops nutritionally adequate low-cost fish foods through research in aquaculture.
- Manages studies of the fundamental requirements of herbivores and carnivores raised in artificial marine environments.

1. DATE October 1976	2. FISCAL YEAR 78	CONSTRUCTION PROJECT DATA (Continued)	3. DEPARTMENT COMMERCE	4. INSTALLATION SAND POINT, SEATTLE, WASHINGTON
5. PROJECT NUMBER A5 B000/FJ 1101		6. PROJECT TITLE WESTERN REGIONAL CENTER		

Appendix E. 9. (Seattle Organizations and Operations)

- Conducts biochemical and processing research on protein isolates and chemically modified or derived proteins for use as ingredients in manufactured foods.
- Investigates nonfood plant and animal resources for biologically active compounds.
- Supports and inspects fish product safety programs.

10. Pacific Marine Environmental Laboratory,
Environmental Research Laboratory:

- Conducts basic and applied research to better understand the marine environmental processes at work in the Pacific Northwest.
- Plans and conducts research on the environment in the estuarine system.
- Investigates the environmental impact of deep ocean mining.
- Studies tsunami (submarine earthquakes).
- Studies and investigates the interactions of the oceans and atmosphere.
- Provides a better understanding of the research and analyses.

11. Marine Ecosystems Analysis,
Environmental Research Laboratory:

- Researches and evaluates the effects of waste water discharges and the impact of oil spillage in Puget Sound.

12. Pacific Marine Center,
National Ocean Survey:

- Develops and recommends ocean surveys, and directs these programs.
- Develops and recommends geodetic surveys and directs these programs.
- Coordinates and evaluates ocean chart corrections and emergency navigational dangers.
- Directs and evaluates tidal monitoring operations.
- Researches and disseminates charts for shipping lanes, harbors, bottom configurations; and other marine information.
- Prepares raw data material on the Northwest Region for air traffic control and pilot charts.

1. DATE October 1976	2. FISCAL YEAR 78	CONSTRUCTION PROJECT DATA (Continued)	3. DEPARTMENT COMMERCE	4. INSTALLATION SAND POINT, SEATTLE, WASHINGTON
5. PROJECT NUMBER A5 B000/FJ 1101		6. PROJECT TITLE WESTERN REGIONAL CENTER		

Appendix E 12 (Seattle Organizations and Operations)

- Provides technical guidance for operation and maintenance of oceanographic systems.
- Maintains all NOAA shipboard electronic equipment.
- Provides technical support for NOAA vessel operations.
- Provides, organizes and directs NOAA vessel repairs and modifications.

13. Other NOAA activities in the Northwest:

- National Sea Grant Program provided \$1.4 million in FY 1975 to the University of Washington for marine education, advisory services, and a wide variety of research projects including seafood technology and fisheries management, assessment, and development
- Coastal Zone Management Program helps support the development of a comprehensive coastal zone program for Washington State, pursuant to the Coastal Zone Management Act of 1972. A grant to the State of Washington of \$500,000 for FY 1976 was provided.

C. New Activities

Over the past several years there have been legislative and other actions that could significantly affect NOAA's activities in the Seattle area.

The most recent is the Fisheries Conservation and Management act of 1976 (dated April 13, 1976; P. L. 94-265), which gives NOAA responsibility for coordinating the management of fish stocks and enforcing regulations within a 200-mile zone off the coast of the United States. To implement this act, NOAA submitted a budget amendment to the Office of Management and Budget (OMB) on April 28, 1976, seeking an additional \$2.4 million for the transition quarter and \$20 million and 270 positions for FY 1977. A NOAA approximation of current estimates of impact in the Seattle area indicates that about an additional \$3 million and 34 positions will be required in FY 1977.

Other recent actions impacting the Seattle area include environmental assessments under the deep ocean mining experiment, which hopes to reduce U.S. dependence on foreign mineral sources. There are extensive deposits of manganese, copper, nickel, and cobalt nodules in the north Pacific, but before mining can begin, the National Environmental Policy Act requires the preparation of an Environmental Impact Statement. This cannot be prepared until NOAA develops sufficient data on the physical, chemical, biological, and geological baseline conditions in the area of major commercial mining interest.

1. DATE October 1976	2. FISCAL YEAR 78	CONSTRUCTION PROJECT DATA (Continued)	3. DEPARTMENT COMMERCE	4. INSTALLATION SAND POINT, SEATTLE, WASHINGTON
5. PROJECT NUMBER A5 B000/FJ 1101		6. PROJECT TITLE WESTERN REGIONAL CENTER		

Appendix E. C. (Seattle Organizations and Operations)

The Pudget Sound MESA (Marine Ecosystems Analysis) study involves the potential impact from increasing oil tanker traffic as the Alaskan oil reserves are developed plus the increased potential for pollution from normal growth. NOAA's role is to define the current circumstances in terms of baseline descriptions and to continue to monitor conditions within the sound.

The Outer Continental Shelf Environmental Assessment Program is the umbrella under which NOAA's efforts support the development of new energy sources. Effort is currently directed at Bureau of Land Management leasing activities in the Gulf of Alaska -- NOAA components are involved in only about 30 percent of the total effort. NOAA is performing studies on the physical oceanography of the Alaska region, examining certain aspects of the biological environment, analyzing specific components of the marine environment for pollutants, and developing oil spill trajectory models.

NOAA's responsibilities under the Marine Mammals Protection act of 1972 are the basis for expanded marine mammal activities. These are aimed primarily at assessing the status of the stocks and obtaining life history information on such species as the bowhead, killer, and humpback whales, commercially harvested species of large whales, and California sea lions.

1. DATE OCTOBER 1976	2. FISCAL YEAR 78	3. DEPARTMENT COMMERCE					4. INSTALLATION SAND POINT, SEATTLE, WASHINGTON				
5. PROJECT NUMBER A5B000/FJ1101		6. PROJECT TITLE WESTERN REGIONAL CENTER									
APPENDIX F-FACILITIES CHARACTERISTICS SUMMARY - BUILDINGS & PIERS											
	SPACE REQUIREMENTS										REMARKS
	Partitioned Office	Open Office	Special/ Lab	Special/ Storage	Special/ Other	Special/ Other	Circula- tion	Net Useable	Building Support	Gross Total	(1) Bldg. support includes allowance for electrical & mechanical space, major circulation, etc.
	Sq. Ft.	Sq. Ft.	Sq. Ft.	Sq. Ft.	Sq. Ft.	Sq. Ft.	Sq. Ft.	Sq. Ft.	Sq. Ft.	Sq. Ft.	
Operations Building	24,710	40,155	3,950				8,258	77,073	7,707	84,780	
Employee Svcs Bldg.	1,000 Banking	1,000 Lounge			3,850 Dining Rm	5,770 Food Prep		11,620	1,162	12,782	
Research Building	44,540	15,380	35,530				9,321	104,771	10,477	115,248	
Electronics Bldg.	13,350		14,090				2,445	29,885	2,989	32,874	
Education Bldg.	9,100				(2) 61,300	(3) 12,000	8,450	90,850	8,700	99,550	(2) Classroom & Lab. (3) Auditorium
Shops	4,320			(4) 1,900	19,900 Shops		410	26,530	4,079	30,609	(4) Paints, Oils & Lubricants Storage
Warehouse	4,160			33,400(5) 61,650(6)				99,210	-	99,210	(5) Heated Storage (6) Unheated Storage
Utility Plant					5,000			5,000	-	5,000	
Enclosed Work Area	200				6,500 Heated	25,000 Unheated		31,700	-	31,700	
Covered Storage and Boat Storage				33,400				33,400	-	33,400	
Security/Information Station	150				1,650(7)	600 Toilets		2,400	-	2,400	(7) Information & Publications
Main Piers					66,800			66,800	-	66,800	
Small Boat Piers					3,000			3,000	-	3,000	
Other Facilities				(8) 180	(9) 500			680		680	(8) Explosives Stg. (9) Food Prep. & Storage
TOTAL	101,530	56,535	53,750	130,530			28,884	513,119(10) 69,800(11)	35,114 (10) Buildings (11) Piers	548,233(10) 69,800(11)	

1. DATE OCTOBER 1976	2. FISCAL YEAR 78	3. DEPARTMENT COMMERCE			4. INSTALLATION SAND POINT, SEATTLE, WASHINGTON				
5. PROJECT NUMBER A5B000/FJ1101		6. PROJECT TITLE WESTERN REGIONAL CENTER							
FACILITIES CHARACTERISTICS SUMMARY - BUILDINGS & PIERS									
	PERSONNEL			ARCHITECTURAL/STRUCTURAL					
	Staff	Ship	Students	Raised Floors	Vaults	Soundproof Const.			REMARKS
				Sq. Ft.	Sq. Ft.	Sq. Ft.			
Operations Building	367					1,630			500 Sq. Ft. Dental Unit 900 Sq. Ft. Health Unit
Employee Services Bldg.	12				250				
Research Building	318			1,300	1,250 Tape/Film	6,650			
Electronics Bldg.	69			1,000	400	3,420			
Education Bldg.	59		400						
Shops	31								16' Clear Height
Warehouse	6								25' Clear Height
Utility Plant									20' Clear Height
Enclosed Work Area	2								10' Clear Height
Covered Storage & Boat Storage									16' Clear Height
Security/Info. Sta.	2								
Main Piers		576							
Small Boat Piers									
Other Facilities									
TOTAL	866	576	400	2,300	1,900	11,700			

1. DATE OCTOBER 1976	2. FISCAL YEAR 78	3. DEPARTMENT COMMERCE				4. INSTALLATION SAND POINT, SEATTLE, WASHINGTON					
5. PROJECT NUMBER A5B000/FJ1101		6. PROJECT TITLE WESTERN REGIONAL CENTER									
FACILITIES CHARACTERISTICS SUMMARY - BUILDINGS & PIERS											
Site Work											
	Dredging	Grading	Roads	Paved Work Area	Parking	Parking	Sidewalk	Covered Walkway	Planting Area	Fencing	Remarks
	c.y.	s.y.	s.y.	s.y.	s.y.	spaces	s.y.	sq. ft.	s.y.	l.f.	
Operations Bldg.		3,000	4,364	500	10,158	219	1,050		3,800		
Employee Services Bldg.		1,500	281	500	-		56	1,200	900		
Research Bldg.		12,000	1,192	2,110	5,436	127	480	5,200	4,100	2,800	
Electronics Bldg.		3,000	562	400	3,117	48	200	1,650	1,900		
Education Bldg.		10,000	733	-	18,086	313	1,030		6,750		
Shops		1,500	-	5,591	-		135		800		
Warehouse		3,000	269	6,844	-		165		1,950		
Utility Plant		500	342	2,409	-		180		300		
Enclosed Work Area		3,000	196	1,466	-		350		500	40	
Covered Storage & Boat Storage		3,000	244	1,333	-		270		900	380	
Security/Information Sta.		500	98	-	1,106	26	110		800		
Main Piers	275,000	-	293	13,100	12,278	240	-		-		
Small Boat Piers		-	-	1,870	-	-	-		-		
Other Facilities											
Total	260,000	41,000 ⁽¹⁾	8,574	36,123	50,181	973	4,026	8,050	22,700	3,220	(1)Exclud.Grading for Paved & Bldg.

1. DATE OCTOBER 1976	2. FISCAL YEAR 78	CONSTRUCTION PROJECT DATA (Continued)				3. DEPARTMENT COMMERCE	4. INSTALLATION SAND POINT, SEATTLE, WASHINGTON			
5. PROJECT NUMBER A5B000/FJ1101		6. PROJECT TITLE WESTERN REGIONAL CENTER								
FACILITIES CHARACTERISTICS SUMMARY - BASE DEVELOPMENT										
	SITE WORK									
	Demolition									
	Bldg.	Paving	Grading	Roads	Sidewalks	Planting Area	Fencing			Remarks
	C.Y.	S.Y.	S.Y.	S.Y.	S.Y.	S.Y.	L.F.			
General Site Work	31,750	380,500	319,500	13,688	2,740	62,800	6,800			
Shoreline Reserve			48,400		1,500	10,500				
Lagoon			9,680							
Main Gate Access		6,000	1,000	4,500	950	300	2,200			
North Gate Access	2 Bldgs.	4,450	1,000	4,450	500	200	1,600			
Hangars 1, 32 & 32 Demolition	319,300	28,500								
Other Outside Facilities										
Total	351,050	419,450	379,580 ⁽¹⁾	22,638	5,690	73,800	10,600			(1) Excludes paved areas & bldg. areas

1. DATE OCTOBER 1976	2. FISCAL YEAR 78	3. DEPARTMENT COMMERCE				4. INSTALLATION SAND POINT, SEATTLE, WASHINGTON			
5. PROJECT NUMBER A5B000/FJ1101		6. PROJECT TITLE WESTERN REGIONAL CENTER							
FACILITIES CHARACTERISTICS SUMMARY - BUILDINGS & PIERS									
MECHANICAL									
	Heating	Cooling	Ventila- tion	Steam Dist.	Chilled Water Dist.	Fire Protection			Remarks
	MBH	Tons	CFM	L.F. (1)	L.F. (1)	Sq. Ft.			(1) Length is of distribution system. The system is 2 pipes, supply & return.
Operations Bldg.	909	170	17,000	170	150	3,950			
Employee Services Bldg.	825	50	6,400	180	130	40			
Research Bldg.	2,200	280	48,000	90	80	2,800			
Electronics Bldg.	841	90	22,700	70	90	1,000			
Education Bldg.	2,261	230	67,250	1,080	1,000	18,000			
Shops	465	20	3,260	40	300	30,609			
Warehouse	860	15	850	--	--	99,210			
Utility Plant	200	--	8,000	--	--	--			
Enclosed Work Area	132	--	4,000	280	--	31,700			
Covered Storage & Boat Storage	--	--	--	--	--	33,400			
Security/Information Sta.	140	3	480	--	--	--			
Main Piers	16,700	--	--	2,670	--	--			
Small Boat Piers	--	--	--	1,970	1,450	--			
Other Facilities	--	--	--	--	--	--			
Total	25,533	858	177,560	6,550	3,200	220,709			

1. DATE OCTOBER 1976	2. FISCAL YEAR 78	CONSTRUCTION PROJECT DATA (Continued)				3. DEPARTMENT COMMERCE	4. INSTALLATION SAND POINT, SEATTLE, WASHINGTON			
5. PROJECT NUMBER A5B000/FJ1101		6. PROJECT TITLE WESTERN REGIONAL CENTER								
FACILITIES CHARACTERISTICS SUMMARY - BUILDINGS & PIERS										
ELECTRICAL										
	Power Demand	Emergency Power	Battery Charging	Special Lighting	Exterior Lighting	Elec. Distribution	Comm. Dist.			Remarks
	KVA	KW	KW	Sq. Ft.	Sq. Ft.	L.F.	L.F.			
Operations Bldg.	390	8.00	10.0	250 ⁽¹⁾	120,000	125	125			(1) RFI Fixtures
Employee Services Bldg.	74	3.00	-	-	7,500	75	75			
Research Bldg.	679	50.00	5.0	9,200 ⁽²⁾	60,000	100	100			(2) High Ceiling & RFI Fixt.
Electronics Bldg.	397	13.00	15.0	6,600 ⁽²⁾	30,000	100	100			
Education Bldg.	586	15.00	-		217,250	1,000	1,000			
Shops	262	3.00	-		45,000	100	100			
Warehouse	127	16.00	20.0		60,000	(3)	100			(3) Fed from Utility Plant
Utility Plant	1,056	8.00	10.0		10,000	250	250			
Enclosed Work Area	33	3.00	-		7,500	(4)	100			(4) Fed from Covered Storage
Covered Storage & Boat Storage	36	3.00	-		7,500	100	100			
Security/Information Sta.	12	0.50	-		10,000	1,700 ⁽⁵⁾	1,700 ⁽⁵⁾			(5) Direct Burial Cables
Main Piers	2,145	5.00	-		222,625	1,800 ⁽⁶⁾	1,800 ⁽⁶⁾			(6) Conduits Cast in Pier Deck
Small Boat Piers	105	1.00	-		18,750	600 ⁽⁷⁾				(7) Underground Conduit
Other Facilities	105 ⁽⁹⁾	50.00 ⁽⁸⁾	5.0		-	2,000				(8) San. Sewer Pump Station (9) Includes Gen. Site Ltg.
Total	6,007	178.50	65.0	16,050	816,000	7,000	4,400			

1. DATE OCTOBER 1976	2. FISCAL YEAR 78	3. DEPARTMENT COMMERCE				4. INSTALLATION SAND POINT, SEATTLE, WASHINGTON				
5. PROJECT NUMBER A5B000/FJ1101		6. PROJECT TITLE WESTERN REGIONAL CENTER								
FACILITIES CHARACTERISTICS SUMMARY - BUILDINGS & PIERS										
UTILITIES										
	Storm Sewer		Sanitary Sewer		Water		(1) Pumping	Liquid ⁽¹⁾ Storage	Solid Waste	Remarks
	Treated	Untreated								
	L.F.	L.F.	L.F.	G.P.M.	L.F.	G.P.M.	G.P.M.	Gal.	C.Y./Yr.	(1) Excluding bldg. HVAC and other minor requirements
Operations Bldg.	500	140	130	97	100	143			5,505	
Employee Services Bldg.	90	140	325	75	100	75			2,500	
Research Bldg.	775	100	130	90	100	125	1-30(2) 100&50(3)	15,000(3) 250	4,770	(2) Aquaculture Lake Water Supply System
Electronics Bldg.	-	440	100	19	100	27		500	1,035	(3) Aquaculture Salt Water Supply System
Education Bldg.	3,175	200	1,000	120	100	180			4,885	
Shops	140	50	320	9	100	38		2-2,000 ⁽⁴⁾	465	(4) Vehicle Fueling Station
Warehouse	-	50	150	5	100	5			90	
Utility Plant	-	50	100	5	120	97	6@25HP	3-25,000 Fuel Oil	-	
Enclosed Work Area	120	50	160	5	100	5			30	
Covered Storage & Boat Storage	-	50	-	0	100	-			-	
Security/Information Sta.	140	50	1,230	5	60	5		500 Fuel Oil	30	
Main Piers	-	-	5,520 ⁽⁵⁾	100 ⁽⁵⁾	1,870	100	2-100(5) 50(6)	30,000(5) 10,000(6)	2,880	(5) Domestic Sewage & bilge & ballast water system
Small Boat Piers	-	-	600 ⁽⁵⁾		300				-	(6) Fuel Handling System
Other Facilities								68,000 ⁽⁷⁾		(7) Emergency Holding Tank Main San. Sewer Pump. Sta.
Total	4,940	1,320	9,765	530 ⁽⁸⁾	3,250	800 ⁽⁸⁾			22,190	(8) Peak Flow

1. DATE OCTOBER 1976	2. FISCAL YEAR 78	3. DEPARTMENT COMMERCE			4. INSTALLATION SAND POINT, SEATTLE, WASHINGTON						
5. PROJECT NUMBER A5B000/FJ1101		6. PROJECT TITLE WESTERN REGIONAL CENTER									
FACILITIES CHARACTERISTICS SUMMARY - BASE DEVELOPMENT											
	UTILITIES										
	Storm Treated	Sewer Untreated	Sanitary Sewer	Water	Pumping	Steam	Chilled Water	Electrical	Communi- cations	Exterior Lighting	Remarks
	L.F.	L.F.	L.F.	L.F.	GPM	L.F.	L.F.	L.F.	L.F.	Sq. Ft.	
General Site Work	7,190	4,610	1,485	12,510	530 ⁽¹⁾	1,970	1,450	2,600	2,600	110,000	(1) Sanitary Sewer, Main Pumping Sta.
Shoreline											
Lagoon				700	250						
Main Gate Access		700 ⁽²⁾	300 ⁽²⁾	500 ⁽²⁾		1,000 ⁽²⁾			700 ⁽²⁾	85,000	(2) Relocation
North Gate Access		(3)				(3)		(3)	(3)	40,000	(3) Various Relocations
Hangars 1, 32 & 33 Demolition											
Other outside Facilities			1,100 ⁽⁴⁾	1,080 ⁽⁴⁾							(4) Off-site connections to Sand Pt. Way mains.
Total	7,190	5,310	2,885	14,790		2,970	1,450	2,600	3,300	235,000	

